# COMMAND FORECAST

STRICOM

U.S. ARMY SIMULATION, TRAINING AND INSTRUMENTATION COMMAND

FY 2000-2004

**April, 1999**

# U.S. Army
# Simulation, Training and Instrumentation Command (STRICOM) Forecast

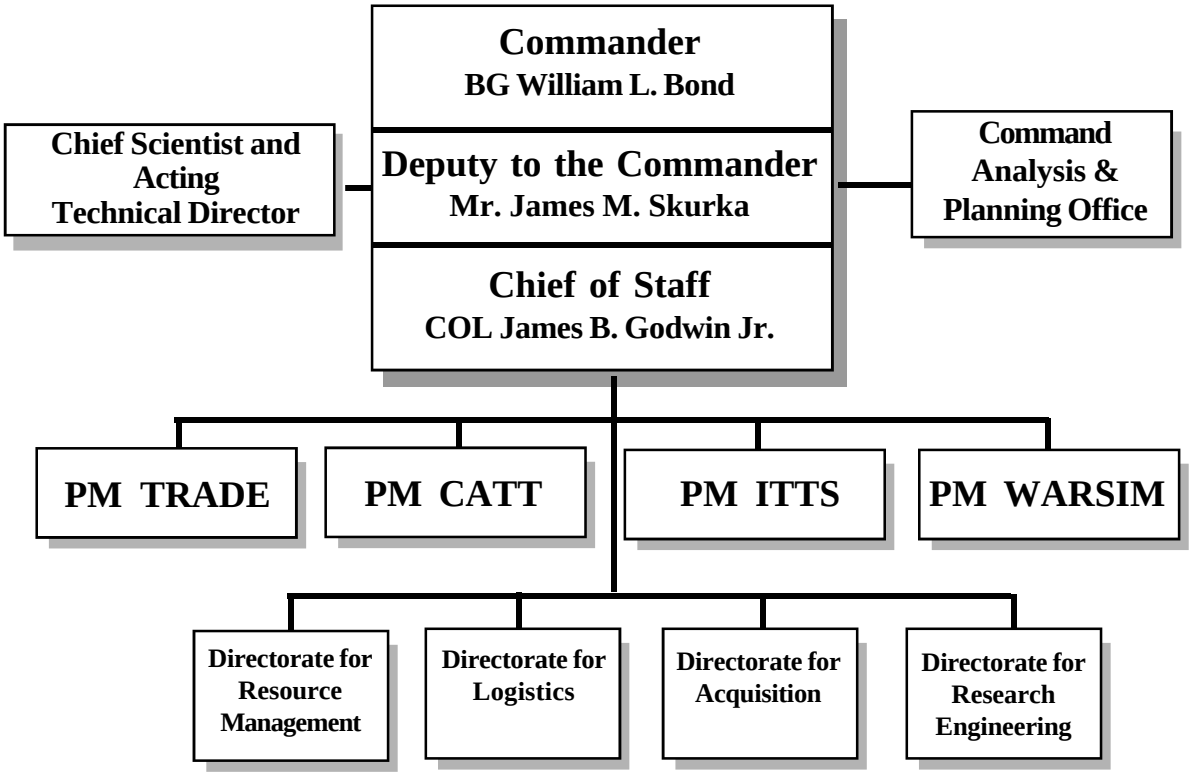
**Introduction**

The information in this Forecast has been prepared as an overview of the STRICOM mission, and the overall projections for the next five years. The projections identify future business opportunities for industry.

The listed programs are known requirements; however, some programs are not funded or are partially funded.

## Contents:

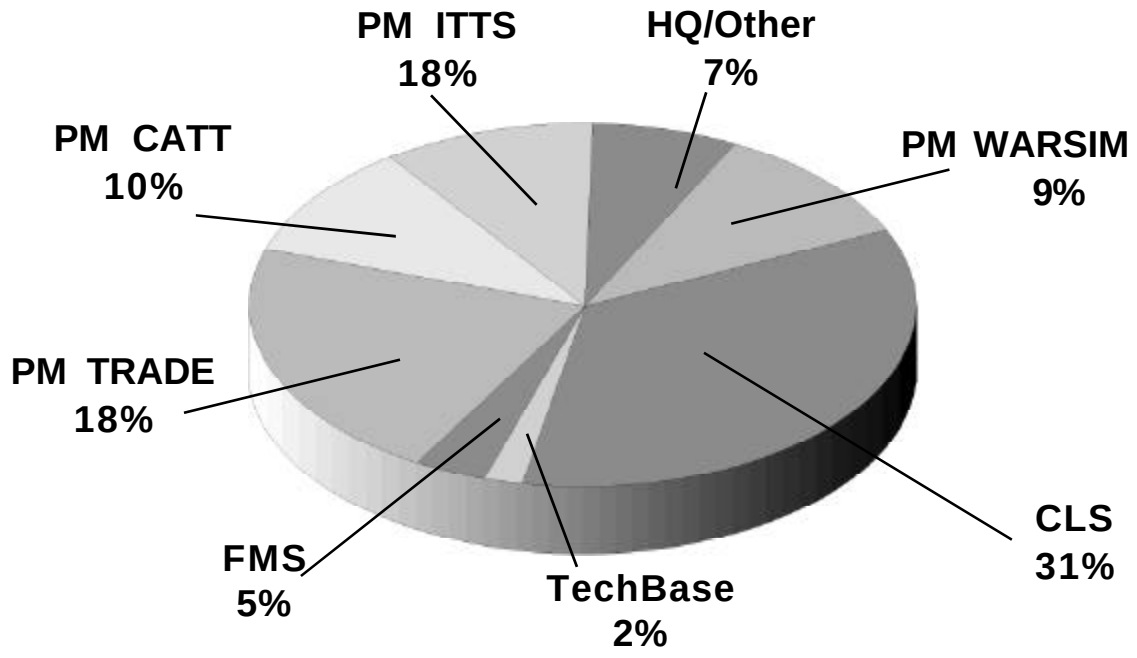
# U.S. Army
# Simulation, Training and Instrumentation Command (STRICOM) Organization




# Mission

- **Technology base for training and testing simulators, simulations, and instrumentation**
- **DoD Technical Manager and DoD Executive Agent for Advanced Distributed Simulation (ADS)**
- **DoD Executive Agent for Aggregate Level Simulation Protocol (ALSP)**
- **DA Executive Agent for Combat Training Centers Instrumentation**
- **Acquisition management of:**
  - **Man-in-the-Loop simulation support for early user requirements and materiel concepts analysis**
  - **Live, virtual and constructive simulations, simulators and training systems**
  - **Technical and operational test instrumentation**
  - **Targets and threat simulator support**
- **"Life Cycle" Sustainment and Post Deployment Software Support (PDSS) for Fielded Army Training Systems and Simulators**

# Simulation, Training and Instrumentation Command Profile Relative Investment FY00-04




# STRICOM Forecast Program Rollup FY00-04

| FY00 Development | Project Manager |
|---|---|
| Advanced Multiple Objective Acquisition System (AMOAS) | PM ITTS |
| Family of Interoperable Transceivers | PM ITTS |
| Fire Support Automated Test System | PM ITTS |
| Foundation Initiative 2010 | PM ITTS |
| Hardened Subminiature Telemetry and Sensor System | PM ITTS |
| High Speed Massive Memory/Electronic Film Capability (HSMM/EFC) | PM ITTS |
| Instrumentation XXI | PM ITTS |
| Land Sea Vulnerability Test Capability (LSVTC) | PM ITTS |
| Lightweight Personnel Detection Device | PM ITTS |
| Mobile IR Scene Projector (MIRSP) | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Range Digital Transmission System | PM ITTS |
| Roadway Simulator | PM ITTS |
| Target Tracking and Control System | PM ITTS |
| Test Support Network | PM ITTS |
| Towed Target Engineering Services | PM ITTS |
| Transportable Range Augmentation & Control System | PM ITTS |
| Unmanned Aerial Vehicle-Tactical (Target) (UAV-T (T)) | PM ITTS |
| Advanced Concept Research Tools (ACRT) | PM CATT |
| AC-130 | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |

# STRICOM Forecast Program Rollup (Cont)

| | |
|---|---|
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Synthetic Environment (SE) Core (AVCATT) | PM CATT |
| AH/OH-6 "Little Bird" Combat Mission Simulator | PM TRADE |
| Bradley A3 Training Systems | PM TRADE |
| Crusader Training System | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Grizzly/Wolverine Training Systems | PM TRADE |
| National Training Center Objective Instrumentation System (NTC-OIS) | PM TRADE |
| Maneuver Combat Training Centers Integration of Army Battle Command Training Systems (MCTC/ABCS) | PM TRADE |
| Corps Battle Simulation (CBS) | PM WARSIM |
| One Semi-Automated Forces (OneSAF) | PM WARSIM |
| Synthetic Theater of War (STOW) -Army | PM WARSIM |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY 00 Production**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Close Combat Tactical Trainer (CCTT) | PM CATT |
| Mobile Automated Instrumentation System (MAIS) | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Patriot Omnidirectional Training Aerial (POTA) Tow Targets | PM ITTS |
| Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers | PM TRADE |
| Advanced Gunnery Training System (AGTS) | PM TRADE |
| Engagement Skills Trainer (EST) | PM TRADE |
| Fire Fighting Training System (FFTS) | PM TRADE |
| Fire Support Combined Arms Tactical Trainer (FSCATT) (Phase I) | PM TRADE |
| Improved Target Acquisition System (ITAS) | PM TRADE |
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST) & Missile Simulations Round (MSR) | PM TRADE |
| JRTC Military Operation on Urbanized Terrain Instrumentation Systems (JRTC-MOUT IS) Phase II | PM TRADE |
| Multiple Integrated Laser Engagement System (MILES) 2000 | PM TRADE |
| Multiple Launch Rocket System (MLRS) Maintenance Trainers | PM TRADE |
| Simulated Area Weapons Effects/Multiple Integrated Laser Engagement System (SAWE/MILES II) | PM TRADE |
| Tank Weapons Gunnery Simulation System/ Precision Gunnery System (TWGSS/PGS) | PM TRADE |
| Synthetic Theater of War (STOW)-Army | PM WARSIM |

**FY00 Service/Support**

| | |
|---|---|
| Aerial Target Flight Services | PM ITTS |
| Foreign Spares | PM ITTS |
| 1/5 Scale Remotely Piloted Vehicle Target Services | PM ITTS |
| Scoring Services and Hardware | PM ITTS |

**FY01 Development**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |

# STRICOM Forecast Program Rollup (Cont)

| | |
|---|---|
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| AC-130 | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Synthetic Environment (SE) Core (AVCATT) | PM CATT |
| Advanced Multiple Objective Acquisition System (AMOAS) | PM ITTS |
| Fire Support Automated Test System | PM ITTS |
| Foundation Initiative 2010 | PM ITTS |
| Hardened Subminiature Telemetry and Sensor System | PM ITTS |
| High Speed Massive Memory/Electronic Film Capability (HSMM/EFC) | PM ITTS |
| Instrumentation XXI | PM ITTS |
| Land Sea Vulnerability Test Capability (LSVTC) | PM ITTS |
| Large Missile Installed System Test Facility | PM ITTS |
| Lightweight Personnel Detection Device | PM ITTS |
| Mobile IR Scene Projector (MIRSP) | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Range Digital Transmission System | PM ITTS |
| Roadway Simulator | PM ITTS |
| Target Tracking and Control System | PM ITTS |
| Test Support Network | PM ITTS |
| Transportable Range Augmentation & Control System | PM ITTS |
| Unmanned Aerial Vehicle-Tactical (Target) (UAV-T (T)) | PM ITTS |
| AH/OH-6 "Little Bird" Combat Mission Simulator | PM TRADE |
| Crusader Training System | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Intelligence/Electronic Warfare Tactical Proficiency Trainer (IEWTPT) | PM TRADE |
| National Training Center Objective Instrumentation System (NTC-OIS) | PM TRADE |
| One Semi-Automated Forces (OneSAF) | PM WARSIM |
| Synthetic Theater of War (STOW) -Army | PM WARSIM |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY 01 Production**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| Close Combat Tactical Trainer (CCTT) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I (AVCATT) | PM CATT |
| High Speed Massive Memory/Electronic Film Capability | PM ITTS |
| HOKUM-X Surrogate Aerial Target | PM ITTS |
| Mobile Automated Instrumentation System (MAIS) | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers | PM TRADE |
| Advanced Gunnery Training System (AGTS) | PM TRADE |
| Bradley A3 Training Systems | PM TRADE |
| Engagement Skills Trainer (EST) | PM TRADE |
| Fire Fighting Training System (FFTS) | PM TRADE |
| Fire Support Combined Arms Tactical Trainer (FSCATT) (Phase I) | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Grizzly/Wolverine Training Systems | PM TRADE |
| Improved Target Acquisition System (ITAS) | PM TRADE |

# STRICOM Forecast Program Rollup (Cont)

**FY01 Production**

| | |
|---|---|
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST) & Missile Simulations Round (MSR) | PM TRADE |
| JRTC Military Operation on Urbanized Terrain Instrumentation Systems (JRTC-MOUT IS) Phase II | PM TRADE |
| Longbow Apache TESS CTC Integration | PM TRADE |
| Maneuver Combat Training Centers Integration of Army Battle Command Training Systems (MCTC/ABCS) | PM TRADE |
| Multiple Launch Rocket System (MLRS) Maintenance Trainers | PM TRADE |
| Multiple Integrated Laser Engagement System (MILES) 2000 | PM TRADE |
| Tank Weapons Gunnery Simulation System/ Precision Gunnery System (TWGSS/PGS) | PM TRADE |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY02 Development**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Core DIS Facilities (CDF) Upgrade | PM CATT |
| Synthetic Environment (SE) Core (AVCATT) | PM CATT |
| Advanced Multiple Objective Acquisition System (AMOAS) | PM ITTS |
| Fire Support Automated Test System | PM ITTS |
| Foundation Initiative 2010 | PM ITTS |
| Land Sea Vulnerability Test Capability (LSVTC) | PM ITTS |
| Large Missile Installed System Test Facility | PM ITTS |
| Mobile IR Scene Projector (MIRSP) | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Range Digital Transmission System | PM ITTS |
| Roadway Simulator | PM ITTS |
| Subsystem Test & Evaluation with Virtual Applications Capability (STEWVAC) | PM ITTS |
| Target Tracking and Control System | PM ITTS |
| Test Support Network | PM ITTS |
| Transportable Range Augmentation & Control System | PM ITTS |
| Transverse Electromagnetic Mode Stirred Chamber (TEMMS) | PM ITTS |
| AH/OH-6 "Little Bird" Combat Mission Simulator | PM TRADE |
| CMTC Live Fire/Objective Instrumentation System (LF/OIS) | PM TRADE |
| Crusader Training System | PM TRADE |
| Future Scout and Cavalry Vehicle Training System | PM TRADE |
| Homestation Instrumentation Training System (HITS) | PM TRADE |
| Intelligence/Electronic Warfare Tactical Proficiency Trainer (IEWTPT) | PM TRADE |
| OH-58D Air Ground Engagement System II (OH-58D AGES II) | PM TRADE |
| SAWE Lightweight Player Detection Device (SAWE-LWTPDD) | PM TRADE |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| One Semi-Automated Forces (OneSAF) | PM WARSIM |
| Synthetic Theater of War (STOW) - Army | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

# STRICOM Forecast Program Rollup (Cont)

**FY02 Production**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| Close Combat Tactical Trainer (CCTT) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Hardened Subminiature Telemetry and Sensor System | PM ITTS |
| HOKUM-X Surrogate Aerial Target | PM ITTS |
| Instrumentation XXI | PM ITTS |
| Lightweight Personnel Detection Device | PM ITTS |
| Transportable Range Augmentation and Ctrl System | PM ITTS |
| Unmanned Aerial Vehicle-Tactical (Target) (UAV-T(T)) | PM ITTS |
| Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers | PM TRADE |
| Advanced Gunnery Training System (AGTS) | PM TRADE |
| Bradley A3 Training Systems | PM TRADE |
| Engagement Skills Trainer (EST) | PM TRADE |
| Fire Support Combined Arms Tactical Trainer (FSCATT) (Phase I) | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Grizzly/Wolverine Training Systems | PM TRADE |
| Improved Target Acquisition System (ITAS) | PM TRADE |
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST) & Missile Simulations Round (MSR) | PM TRADE |
| JRTC Military Operation on Urbanized Terrain Instrumentation Systems (JRTC-MOUT IS) Phase II | PM TRADE |
| Longbow Apache TESS CTC Integration | PM TRADE |
| Maneuver Combat Training Centers Integration of Army Battle Command Training Systems (MCTC/ABCS) | PM TRADE |
| Multiple Launch Rocket System (MLRS) Maintenance Trainers | PM TRADE |
| Multiple Integrated Laser Engagement System (MILES) 2000 | PM TRADE |
| National Training Center Objective Instrumentation System (NTC-OIS) | PM TRADE |
| Tank Weapons Gunnery Simulation System/ Precision Gunnery System (TWGSS/PGS) | PM TRADE |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY03 Development**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Core DIS Facilities (CDF) Upgrade | PM CATT |
| Advanced Multiple Objective Acquisition System (AMOAS) | PM ITTS |
| Autonomous Vehicle Control Instrumentation | PM ITTS |
| Fire Support Automated Test System | PM ITTS |
| Foundation Initiative 2010 | PM ITTS |
| Land Sea Vulnerability Test Capability (LSVTC) | PM ITTS |
| Large Missile Installed System Test Facility | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Range Digital Transmission System | PM ITTS |
| Range Instrumentation Utilizing GPS Timing | PM ITTS |
| Roadway Simulator | PM ITTS |

# STRICOM Forecast Program Rollup (Cont)

| | |
|---|---|
| Subsystem Test & Evaluation with Virtual Applications Capability (STEWVAC) | PM ITTS |
| Target Tracking and Control System | PM ITTS |
| Telemetry Tracking & Acquisition System | PM ITTS |
| Test Support Network | PM ITTS |
| Transverse Electromagnetic Mode Stirred Chamber (TEMMS) | PM ITTS |
| AH/OH-6 "Little Bird" Combat Mission Simulator | PM TRADE |
| CMTC Live Fire/Objective Instrumentation System (LF/OIS) | PM TRADE |
| Crusader Training System | PM TRADE |
| Future Scout and Cavalry Vehicle Training System | PM TRADE |
| Homestation Instrumentation Training System (HITS) | PM TRADE |
| SAWE Lightweight Player Detection Device (SAWE-LWTPDD) | PM TRADE |
| One Semi-Automated Forces (OneSAF) | PM WARSIM |
| Synthetic Theater of War (STOW) -Army | PM WARSIM |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY03 Production**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Hardened Subminiature Telemetry and Sensor System | PM ITTS |
| HOKUM-X Surrogate Aerial Target | PM ITTS |
| Instrumentation XXI | PM ITTS |
| Lightweight Personnel Detection Device | PM ITTS |
| Unmanned Aerial Vehicle-Tactical (Target) (UAV-T(T)) | PM ITTS |
| Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers | PM TRADE |
| Advanced Gunnery Training System (AGTS) | PM TRADE |
| Bradley A3 Training Systems | PM TRADE |
| Engagement Skills Trainer (EST) | PM TRADE |
| Fire Support Combined Arms Tactical Trainer (FSCATT) (Phase I) | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Grizzly/Wolverine Training Systems | PM TRADE |
| Intelligence/Electronic Warfare Tactical Proficiency Trainer (IEWTPT) | PM TRADE |
| Improved Target Acquisition System (ITAS) | PM TRADE |
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST), & Missile Simulations Round (MSR) | PM TRADE |
| JRTC Military Operation on Urbanized Terrain Instrumentation Systems (JRTC-MOUT IS) Phase II | PM TRADE |
| Longbow Apache TESS CTC Integration | PM TRADE |
| Multiple Integrated Laser Engagement System (MILES) 2000 | PM TRADE |
| Multiple Launch Rocket System (MLRS) Maintenance Trainers | PM TRADE |
| National Training Center Objective Instrumentation System (NTC-OIS) | PM TRADE |
| OH-58D Air Ground Engagement System II (OH-58D AGES II) | PM TRADE |
| Tank Weapons Gunnery Simulation System/ Precision Gunnery System (TWGSS/PGS) | PM TRADE |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

# STRICOM Forecast Program Rollup (Cont)

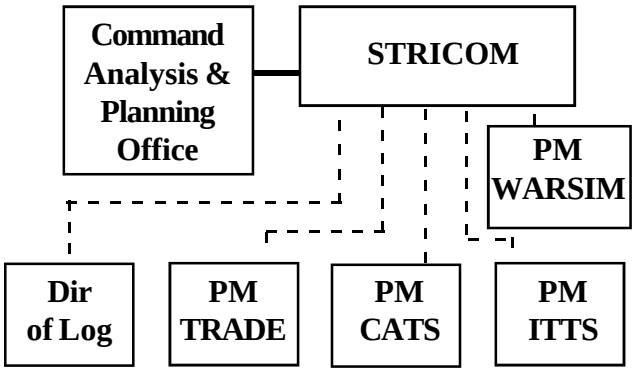
**FY04 Development**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Close Combat Tactical Trainer (CCTT) P3I | PM CATT |
| Core DIS Facilities (CDF) Upgrade | PM CATT |
| Advanced Propulsion Instrumentation | PM ITTS |
| Autonomous Vehicle Control Instrumentation | PM ITTS |
| Depleted Uranium Detection & Location System | PM ITTS |
| Foundation Initiative 2010 | PM ITTS |
| Fire Support Automated Test System | PM ITTS |
| New Generation Army Targetry System (NGATS) | PM ITTS |
| Range Digital Transmission System | PM ITTS |
| Range Instrumentation Utilizing GPS Timing | PM ITTS |
| Subsystem Test & Evaluation with Virtual Applications Capability (STEWVAC) | PM ITTS |
| Target Tracking and Control System | PM ITTS |
| Telemetry Tracking & Acquisition System | PM ITTS |
| Transverse Electromagnetic Mode Stirred Chamber (TEMMS) | PM ITTS |
| CMTC Live Fire/Objective Instrumenation System (LF/OIS) | PM TRADE |
| Future Scout and Cavalry Vehicle Training System | PM TRADE |
| Homestation Instrumentation Training System (HITS) | PM TRADE |
| One Semi-Automated Forces (OneSAF) | PM WARSIM |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

**FY04 Production**

| | |
|---|---|
| Advanced Concept Research Tools (ACRT) | PM CATT |
| Aviation Combind Arms Tactical Trainer (AVCATT-A) | PM CATT |
| Hardened Subminiature Telemetry and Sensor System | PM ITTS |
| Instrumentation XXI | PM ITTS |
| Lightweight Personnel Detection Device | PM ITTS |
| Bradley A3 Training System | PM TRADE |
| Crusader Training System | PM TRADE |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | PM TRADE |
| Grizzly/Wolverine Training Systems | PM TRADE |
| Intelligence/Electronic Warfare Tactical Proficiency Trainer (IEWTPT) | PM TRADE |
| Improved Target Acquisition System (ITAS) | PM TRADE |
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST), & Missile Simulations Round (MSR) | PM TRADE |
| JRTC Military Operation on Urbanized Terrain Instrumentation Systems (JRTC-MOUT IS) Phase II | PM TRADE |
| Multiple Integrated Laser Engagement System (MILES) 2000 | PM TRADE |
| National Training Center Objective Instrumentation System (NTC-OIS) | PM TRADE |
| OH-58D Air Ground Engagement System II (OH-58D AGES II) | PM TRADE |
| SAWE Lightweight Player Detection Device (SAWE-LWTPDD) | PM TRADE |
| Warfighting Intelligence Model (WIM) | PM WARSIM |
| Warfighting Simulation (WARSIM) 2000 | PM WARSIM |

# Security Assistance Program (Foreign Military Sales)




The Security Assistance Program is managed within the Command Analysis and Planning Office. After Foreign Military Sales (FMS) cases are implemented, contracts are executed by the assigned Project Director, either in Project Manager organizations or Directorate of Logistics. The Command Analysis and Planning Office maintains oversight for program execution through case closure.

# FMS Acquisition Programs

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| Czech Republic | | | | | | |
| MILES | | Pending | | | | |
| SimCenter | | Pending | | | | |
| Egypt | | | | | | |
| M1A1 Suez Range | | Prod | | | | |
| M60A1/M1A1 AGTS | | Prod | | | | |
| Targets MQM-107D | | Prod | | | | |
| Greece | | | | | | |
| Armor Trng | | Pending | | | | |
| Japan | | | | | | |
| Target Flight Services | | Prod | | | | |
| Korea | | | | | | |
| Target Spares/Support | | Prod | | | | |
| Equipment | | | | | | |
| Kuwait | | | | | | |
| Warrior MILES | | Prod | | | | |
| FSCATT | | Pending | | | | |
| Saudi Arabia | | | | | | |
| M60A3 Tank VIGS | | Prod | | | | |
| TWGSS | | Prod | | | | |
| Target Flight Services | | Pending | | | | |
| Slovenia | | | | | | |
| JANUS | | Prod | | | | |
| Sweden | | | | | | |
| JANUS | | Prod | | | | |
| Taiwan | | | | | | |
| PGTS | | Pending | | | | |
| Turkey | | | | | | |
| BBS | | Pending | | | | |

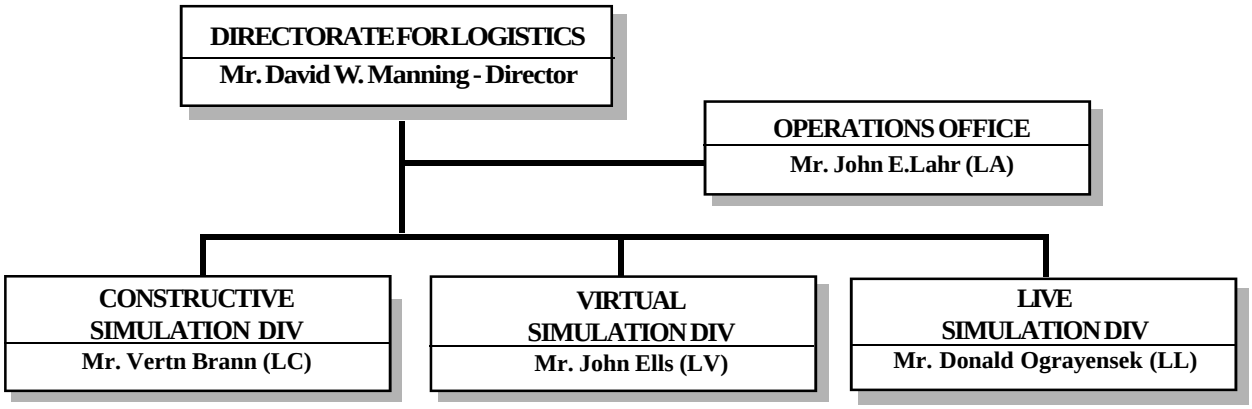
Foreign Military Sales (FMS) is a non-appropriated program through which eligible foreign governments purchase defense articles, services, and training from the United States Government. The purchasing government pays all costs that may be associated with a sale. STRICOM POC is Mr. John Daniele, (407) 384-5104, AMSTI-CA.

# Life Cycle Contractor Support

*SECTION* 1

# Directorate for Logistics
# Mr. David W. Manning

## Organization




## Mission

- Provide logistics acquisition support to STRICOM PMs
- Provide total life cycle management of all STRICOM supported Army Training Aids, Devices, Simulators & Simulations (TADSS) and training instrumentation systems worldwide
- Procure/reprocure off-the-shelf TADSS for Army and FMS customers
- Provide supply, property book, and facilities support for STRICOM command operations

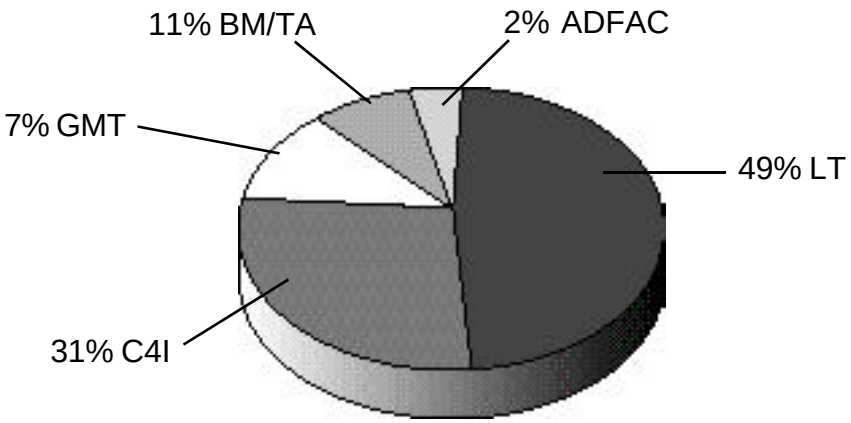
# Life Cycle Contractor Support

The STRICOM Logistics Directorate supports the Command fielded TADSS mission through the execution and management of Life Cycle Contractor Support (LCCS) contracts. These contracts are structured to provide various levels of support encompassing one or more of the following concepts:

- **LCCS** Supply, maintenance, new equipment training, engineering services, configuration management, and inventory management
- **LCCS+** Relocation, conversions, PDSS, deployments and modifications
- **LCCS++** Operators, instructors, role players and facilities management

STRICOM fielded TADSS are supported under one of the following consolidated LCCS contracts managed by the Logistics Directorate:

- LT - Live Training (LCCS, LCCS+)
- BM/TA - Battlefield Mobility/Target Acquisition (LCCS, LCCS+, LCCS++)
- ADFAC - Air Defense Field Artillery and Chemical (LCCS, LCCS+, LCCS++)
- GMT- Gunnery Maintenance Trainers (LCCS, LCCS+, LCCS++)
- C4I - Command, Control, Communication, Computers and Intelligence (LCCS, LCCS+, LCCS++)




# Logistics Live Simulation Division

## Mission

- Provide logistics acquisition support to PM TRADE and PM ITTS
- Provide total life cycle management for live training and testing operations for the Army Combat Training Centers (CTCs), test and evaluation centers, ranges, threat simulators, and targets

# Logistics Live Simulation Division

## Life Cycle Contractor Support

The Logistics Live Simulation Division (LL) supports their mission through the execution and management of the following consolidated LCCS contract:

**Live Training (LT)**

- Description - Provide LCCS for: National Training Center - Instrumentation System; Joint Readiness Training Center - Instrumentation System; Combat Maneuver Training Center - Instrumentation System; Area Weapon Scoring System; Multiple Integrated Laser Engagement Systems (MILES) Force-on-Force training devices for foot soldiers, Tactical Ground Vehicles, Tactical Aviation Vehicles, M16 rifles, M1 Tanks, M2/M3 Bradley Fighting Vehicles, TOW Missile Systems, DRAGON Missile Systems; and Air-to-Ground Engagement System (AGES) for AH-1, UH-60, CH-47 and AH-64 helicopters.
- Contract - Fixed Price, Award Fee (FPAF); Award August 1999; One base year and four option years (60 months).

# Logistics Virtual Simulation Division

## Mission

- Provide logistics acquisition support to PM TRADE
- Provide total life cycle management for system and non-system armor, cavalry, aviation, chemical, air defense, and field artillery trainer

## Life Cycle Contractor Support

The Logistics Virtual Simulation Division (LV) supports their mission through the execution and management of the following consolidated LCCS contracts:

**Gunnery Maintenance Trainers (GMT)**

- Description - Provide LCCS for: Abrams tank Conduct of Fire Trainer (COFT); Bradley COFT; Abrams tank driver and maintenance trainers; Bradley maintenance trainers; Thru Sight Video trainers; Precision Gunner Training Systems; and M1A2 Advanced Gunnery Training Systems.
- Contract - Fixed Price, Award Fee (FPAF); Award November 2000; One base year and four option years (60 months).

**Battlefield Mobility/Target Acquisition (BM/TA)**

- Description - Provide LCCS for: AH-1, UH-1, CH-47, OH-48, UH-60, and AH-64 Aviation Flight Simulators, maintenance and part task trainers; and U.S. Army Transportation School training devices.
- Contract - Fixed Price, Award Fee (FPAF); Awarded November 1998; One base year and four option years (60 months).

**Air Defense Field Artillery and Chemical (ADFAC)**

- Description - Provide LCCS for FSATS, HATS, FOX, MTS, IMTS, PIMITS, JTIDS, RTS, JROMPS, AN/TPQ-36, AN/TPQ-37, FID, FIMIT, EIDS, STPT and GUARDFIST II trainers.
- Contract - Fixed Price, Award Fee (FPAF); Award August 2000; One base year and four option years (60 months).

# Logistics Constructive Simulation Division

## Mission

- Provide logistics acquisition support to PM CATT and PM WARSIM
- Provide total life cycle management for system and non-system collective trainers, staff simulations, intelligence trainers, advanced distributed simulations and communication/signal trainers

## Life Cycle Contractor Support

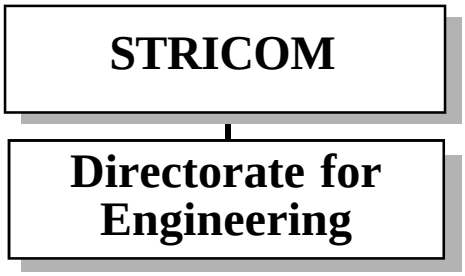
The Logistics Constructive Simulation Division (LC) supports their mission through the execution and management of the following consolidated LCCS contract:

**Command, Control, Communication, Computers and Intelligence (C4I)**

- Description - Provide LCCS for: Simulation Networking System (SIMNET); Basic Morse Mission Trainer (BMMT); Morse Mission Trainer (MMT); Signal Intelligence/Electronic Warfare Equipment Operator Simulator (SEOS); Brigade/ Battalion Simulation (BBS); Corps Battle Simulation (CBS); Basic Electronic Maintenance Trainer (BEMT); JANUS; Guardrail Maintenance Trainer (GRMT); Non-Communication Signal Recognition Trainer (NCSRT); All Source Analysis System (ASAS); and Trailblazer, Quick fix Maintenance Trainer (TQMT).
- Contract - Fixed Price, Award Fee (FPAF); Awarded February 1999; One base year and four option years (60 months).

# Technology Base

**STRICOM Technology Base is managed by the Directorate for Engineering in the Synthetic Environment and Technology Management Division.**




## Mission

– Advance development and use of Modeling Simulation (M&S), including Advanced Distributed Simulation (ADS) related to specific Army experiments and demonstrations in support of U.S. Army Training and Doctrine Command (TRADOC) Battlelabs and the Army's Force XXI

– Develop standards, architecture and interfaces essential to realize DoD/Army vision of creating a Verified, Validated & Accredited synthetic electronic battlefield environment

– Direct and stimulate advances in those technologies required for real-time interactive linking within and among constructive, virtual and live simulations

## Uses of Synthetic Environments

– Investigation and demonstration of new warfighting concepts including development of tactics, doctrine, training techniques, soldier support systems and system upgrades

# Tech Base Projects in Support of ADS Program

**Interconnection**
- – Live/Virtual/Constructive Linkages
- – C41 Interoperability
- – Architecture Extensions

**Information**
- – Data Correlation
- – Data Exchange Interfaces

**Representation**
- – Computer Generated Forces (CGF) Advancement
- – Implement Radio Models

**Interface**
- – Individual Combatant
- – Voice I/O with CGF

**Architecture**
- – High Level Architecture (HLA) Tools
- – HLA Research and Technical Support

# Examples of Simulators, Simulations and Modeling Technology Base

**Advanced Tactical Engagement Simulation (A-TES) Technology** -- A technology program investigating potential solutions to meet the Army's future TES requirements for the next generation of weapon systems with extended engagement ranges, lethal as well as non-lethal capabilities, all-weather and continuous operations capabilities, and increasingly sophisticated fire control and smart munition capabilities. This research and associated technology is needed to develop affordable system solutions that minimize the impact of force modernization on the communications bandwidth requirements, system power, weight and packaging of test and training systems.

**Computer Generated Forces (CGF) Technology** -- A technology program with the goal to investigate, prototype and demonstrate the use of simulation technologies to enhance the intelligence, scale and realism of CGF systems. This research is needed to identify simulation technologies that will increase scalability and allow for variable fidelity levels, as well as to develop and demonstrate methods and computational architecture for configurable behavioral modeling and intelligent behavioral implementations.

**Combat Trauma Patient Simulator (CTPS)** -- Developing a Battlefield Live Fire Casualty Assessment for the individual soldier. The objective is to investigate, prototype and demonstrate a dual purpose training and analysis system that realistically and physically simulates the emergency medical treatment process from the time of injury through initial treatment at the field hospital.

**Dismounted Infantry Integration** -- Create a multi-sensory real-time simulation of the battlespace that immerses the individual soldier in three-dimensional geographical space utilizing virtual reality (head-mounted stereoscopic displays, 3-D audio systems, position tracking devices and innovative input devices such as instrumented gloves). Networked virtual reality devices will integrate individual soldiers into distributed interactive simulation synthetic environments. In addition, enhancement of the representation of the individual soldier in semi-automated forces (SAFOR) systems is required.

**Distributed Simulation Exercise Construction Toolset (DiSECT)** -- Developing infrastructure and applications to support distributed simulation exercises through unifying existing and new simulation tools and capabilities to support STRICOM current and future needs. DiSECT's goals are to provide a tool that will take an exercise from 'cradle-to-grave' through exercise planning and development, run-time control and monitoring, and run-time analysis and after-action-review.

**Force Projection Logistics** -- The US Army's current Synthetic Environment does not provide sufficient logistical fidelity to realistically constrain warfighting simulations in order to support accurate and valid Force Development and Acquisition decisions. Research and technologies are needed to enable the linkage of logistic simulations with warfighting simulations so that realistic Force Development and Acquisition decisions can be made.

**High Level Architecture (HLA)** -- Developing tools to facilitate building simulation and federation object models for HLA compliance with the goal to minimize HLA development time and to institutionalize HLA development tools.

# Examples of Simulators, Simulations and Modeling Technology Base (Cont)

**Individual Combatant Simulation Technology** -- Develop High Level Architecture (HLA) compliant individual combatant simulation systems across the research, development, and acquisition (RDA); advanced concepts and requirements (ACR); and training, exercises, and military operations (TEMO) domains. Research and technologies in areas such as speech recognition and speech synthesis integrated between manned virtual simulations and semi-automated forces are needed to enable requirements analysis for platoon and below for joint training, mission planning/rehearsal, and M&S to support ACR, RDA and TEMO domains.

**Inter-Vehicle Embedded Simulation Technology (INVEST)** -- A technology exploration program with the goal of identifying those key technologies that have the highest payoff. The program will set the course for a totally embedded training (ET) and embedded simulation (ES) system for ground combat vehicles. INVEST will develop and demonstrate the technology that will lay the foundation for incorporating embedded simulation into future and legacy combat vehicles.

**Networked Battlefield Distributed Simulation Technology** -- Supporting interactive networked simulators to train combined arms forces and provide for test and evaluation of future weapons systems, tactics and doctrine. Provide simulation models to train units in a variety of actions-in-short-of-war missions, to include disaster relief, deployment, redeployment, peace-keeping, non-combatant evacuation operation, U.N. security force duty and civil emergencies.

**Synthetic Environment Data Representation & Interchange Specification (SEDRIS)**
-- A development project conceived and implemented to capture and provide a complete (terrain, ocean, atmosphere, and space) data model of the physical environment, access methods to that data model, and an associated interchange format. A common representation of the physical environment is a critical element in modeling and simulation (M&S) and is a necessary precondition for the interoperability of heterogeneous simulations. The level of interoperability achieved depends heavily upon the degree of consistency, completeness, and unambiguous definition of environmental data. Today, no uniform and effective standard mechanism exists for describing, reusing, and interchanging environmental data among M&S applications. Additionally, data sharing rarely occurs between the operational and simulation communities although each community uses representations of the same physical aspects of the real world. SEDRIS mechanisms will facilitate interoperability among heterogeneous simulations by providing complete and unambiguous interchange of environmental data.

**Synthetic Natural Environment (SNE)** -- A technology exploration program with the goal of prototyping and demonstrating key technologies to achieve the Army vision of a common synthetic natural environment. The program will focus on developing common data, data models and processes. This program will address issues associated with networked, real-time, soldier-in -the-loop simulations. It will investigate issues related to models and their interactions with the synthetic natural environment.

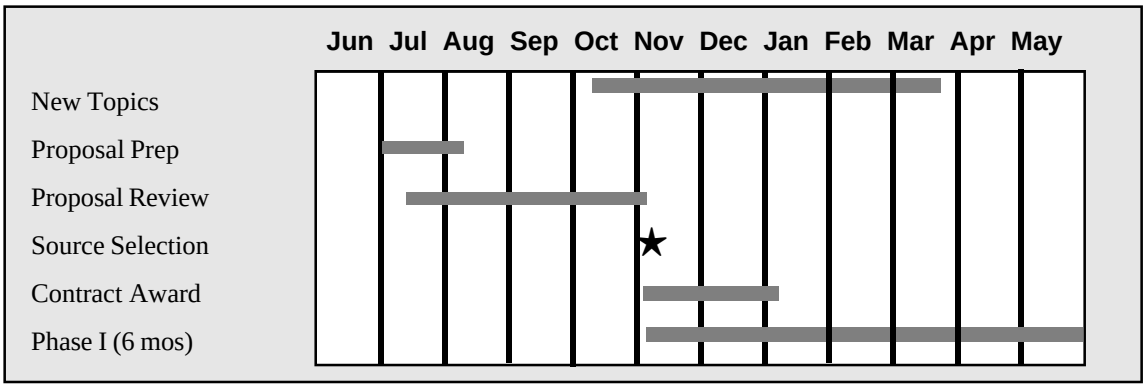
# Small Business Innovation Research (SBIR) Program

SBIR is a congressionally mandated program directed toward small firms with strong research and development (R&D) capabilities in science and engineering for the purpose of proposing solutions to needs identified by the various federal government agencies. The Army expresses their needs through topic descriptions which are focused toward resolving technical issues from the defense technology plan and the Army Science and Technology Master Plan. Army topics appear in the Department of Defense (DoD) SBIR Program solicitation which opens in the spring. See the Army SBIR Review Cycle chart for detailed process information. The objectives of the SBIR program are to stimulate technological innovation in the private sector, to increase the role of small business in meeting the R&D needs of DoD, to emphasize and increase the transfer of DoD sponsored R&D into the private sector, and to improve participation of women-owned small businesses and socially and economically disadvantaged small business firms in the program.

Programatically, SBIR includes 3 phases. Phases I and II being SBIR funded phases while Phase III funding must come from other sources. Phase I is generally 6 months long and focuses on concept definition and feasibility analysis.

A comprehensive demonstration of a concept/design is the objective of Phase II. Phase II's periods of performance are generally 24 months and result in the delivery of hardware, software, and technical data. Phase III is the culmination of a successful SBIR project and will result in the delivery of end items that satisfy a DoD requirement or in the transfer of technology into the commercial sector or both. Historically, STRICOM's topics have been Research or Exploratory in nature, directed toward the resolution of Modeling and Simulation Technology Area issues.

# Army SBIR Review Cycle




- Congressionally mandated program
- R&D in Science and Engineering
- Topic description provided by Army
- Stimulate technical innovation
- Increase role of small business
- Transfer DoD R&D to private sector
- Phase I, usually 6 months long, concept definition, feasibility analysis
- Successful Phase I programs compete for Phase II Funding
- Phase II Programs must have potential for Commercialization and a sponsor

POC: Mr. Mark McAuliffe
Phone: 407-384-3929
EMail: Mark_McAuliffe@stricom.army.mil

In DoD's FY99.2 SBIR solicitation which opens July 1999 and closes August 1999, STRICOM has six topics. Any qualified small business firm interested in participating in the program should obtain a copy of the solicitation, review all relevant topic areas, and prepare and submit their proposal(s) in accordance with the instructions contained in the solicitation. A copy of the solicitation can be obtained from the Defense Technical Information Center (DTIC) located in Alexandria, Virginia, by calling their toll free (800) 225-3842 or commercial (703) 274-6902 help numbers. In addition, offerors are strongly urged to obtain the Technical Information Package prepared by DTIC for the specific topic area of interest. These packages are intended to help a potential offerer to prepare the technical proposal and contain additional technical information about the topic, if available and releasable. Questions about the SBIR Program should be directed to STRICOM's SBIR point of contact, Mr. McAuliffe (407) 384-3929.

# Advanced Concepts and Technology II (ACT II)

- ACT II program is sponsored by Army Chief of Staff (ACS) and Assistant Secretary of Army for Research, Development and Acquisition (SARDA) to support research to maintain a state-of-the-art TRADOC Battle Lab posture.
- TRADOC Battle Lab research topics are administered by Army Research Office (ARO) via Broad Agency Announcement (BAA) & contracted by Army Research, Development and Engineering Centers (RDEC's), building partnerships with Army, Industry & Academia.
- ACT II encourages application of mature technologies to resolve Army mission needs. Successful demonstrations may lead to additional development through other Army R&D programs.
- Act II BAA programs (Concept Paper followed by any subsequent Proposal) are funded to a maximum of $ 1.5 M with planned performance not to exceed 12 months.

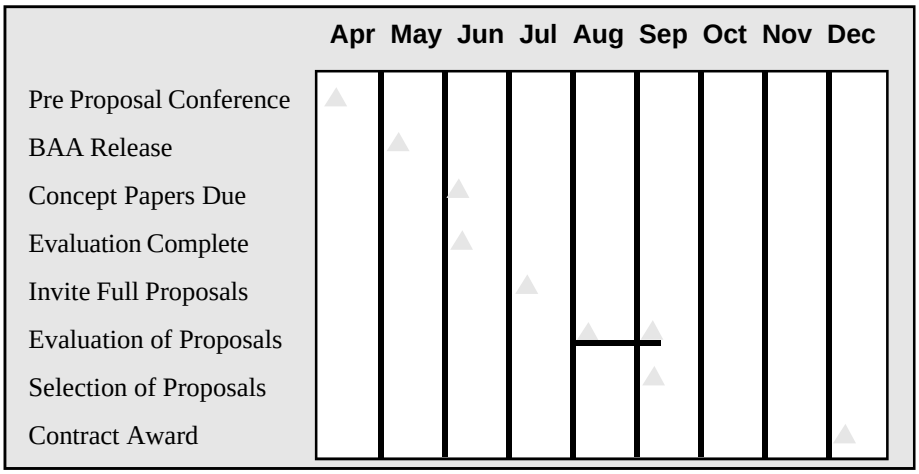
## Streamlined Acquisition

The ACT II program minimizes industry's proposal preparation burden by requesting a brief, 2-page concept paper on innovative technology demonstrations. Concept papers are submitted to the ARO, and those submitting concepts which are evaluated as highly relevant to Army needs are invited to submit a 25 page technical proposal. The best qualified proposals are selected for funding. Those projects will be awarded and technically monitored by selected Army Laboratories and RDEC's. The Army Battle Labs oversee the ACT II projects, receive all deliverables and assess overall benefits through formal demonstrations and Advanced Warfighting Experiments (AWE).

For Information About ACT II Broad Agency Announcements visit the ACT II Website:

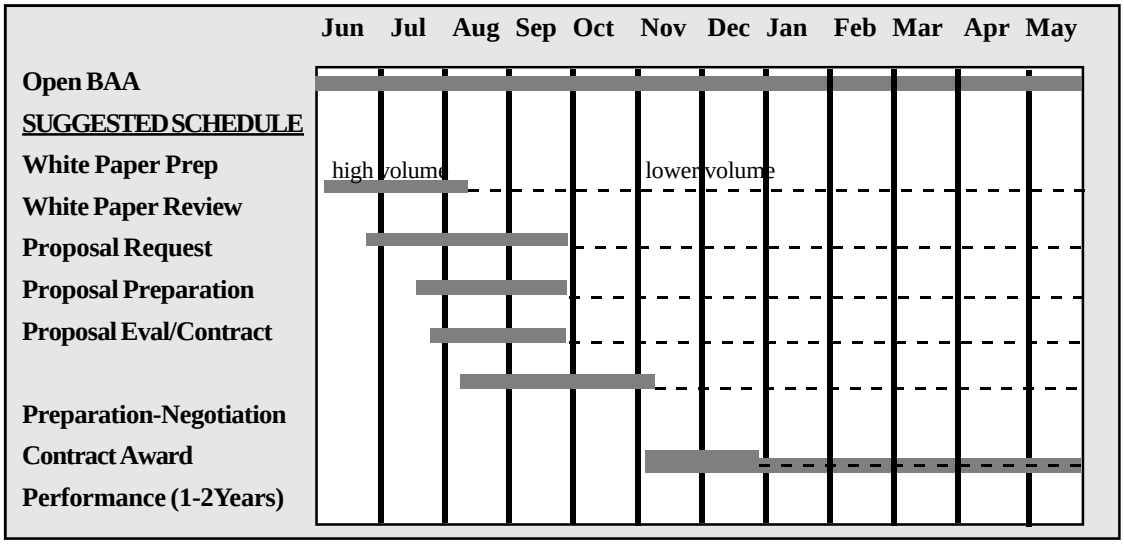
http://www.aro.ncren.net/arowash/rt/actii.htm

# ACT II Event Schedule




POC: Mr. Raymond F. Green
Phone: 407-384-3925
Email: Raymond_F._Green@stricom.army.mil

# STRICOM/ARI BAA Contract Schedule (FY99/00)




See STRICOM WEB Page at www.stricom.army.mil

- Identifies STRICOM and ARI Technology Objectives to industry
- Continuously open
- Contractor submits white papers for consideration prior to request for proposal
- Evaluations performed by engineering personnel
- Current Research Topics: Battlefield Simulation; Training Device Simulators; Instrumentation, Targets and Threat Simulation; Test and Evaluation; Training Systems; and Training System Evaluation Research

# Project Manager Training Devices (PM TRADE)

*SECTION* 2

## Colonel Craig B. Hanford

## Mission

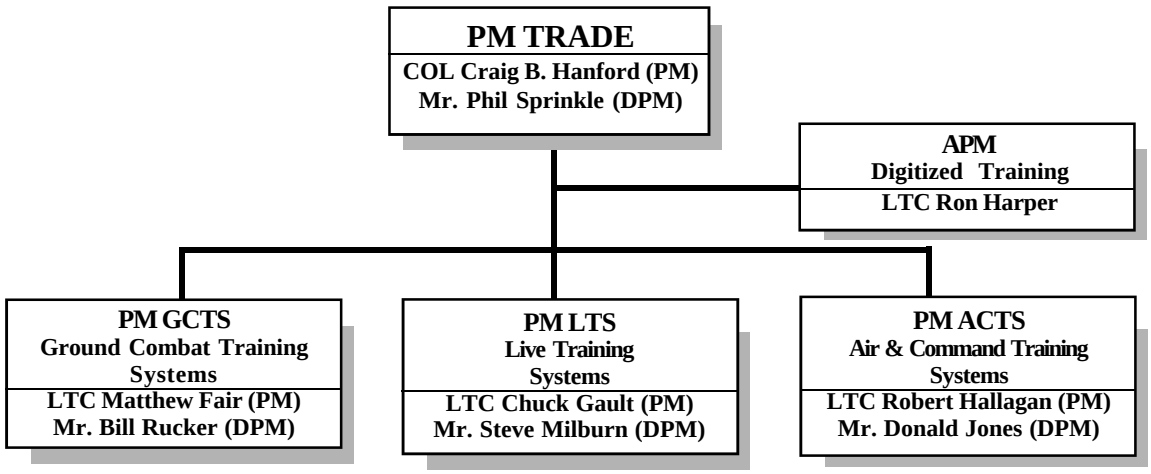
**Soldier Training**
**Gunnery/Targets**
**Flight Simulators**
**Unit Training**

**Force-On-Force**
**Combat Training Centers**
**FM 25-100 Battle**
**Focused Training**

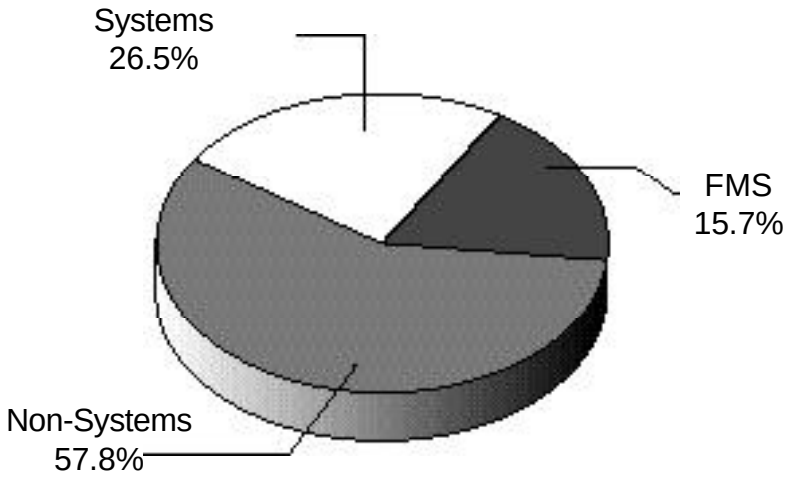
- Develop and field assigned system and non-system training devices and simulators and synthetic flight training systems for the U.S. Army
- AMC Executive Agent for Combat Training Centers Instrumentation and System Acquisition
- Direct the activities of three assigned product managers
- Acquire assigned training devices and simulators for allies . . . foreign military sales

**Provide soldiers, leaders and units the training systems to enhance their ability to perform their mission . . . to fight and win in combat!**

## Organization



# Project Manager Training Devices
# Relative Investment FY00-FY04




# Force-on-Force Training

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| CMTC LF/OIS | | | | R&D | | |
| Homestation Instrumentation Training System (HTI) | | | | R&D | | |
| JRTC-MOUT-IS Phase II | Prod | | | | | |
| Longbow - Apache (LBA) TESS CTC Intergration | | | Prod | | | |
| MCTC ABCS | R&D | | | Prod | Sust. | |
| Multiple Integrated Laser Engagement System (MILES) 2000 | Prod | | | | | |
| National Training Center Objective Instrumentation System | R&D | | | Prod | | |
| OH-58D AGES II | | | | R&D | Prod | |
| Opposing Forces Surrogate Vehicle (OSV) | Prod | | | | | |
| SAWE Lightweight Player Detection Device | | | | R&D | | Prod |
| Simulated Area Weapons Effects/Multiple Integrated Laser Engagement System (SAWE/MILES II) | Prod | | | | | |

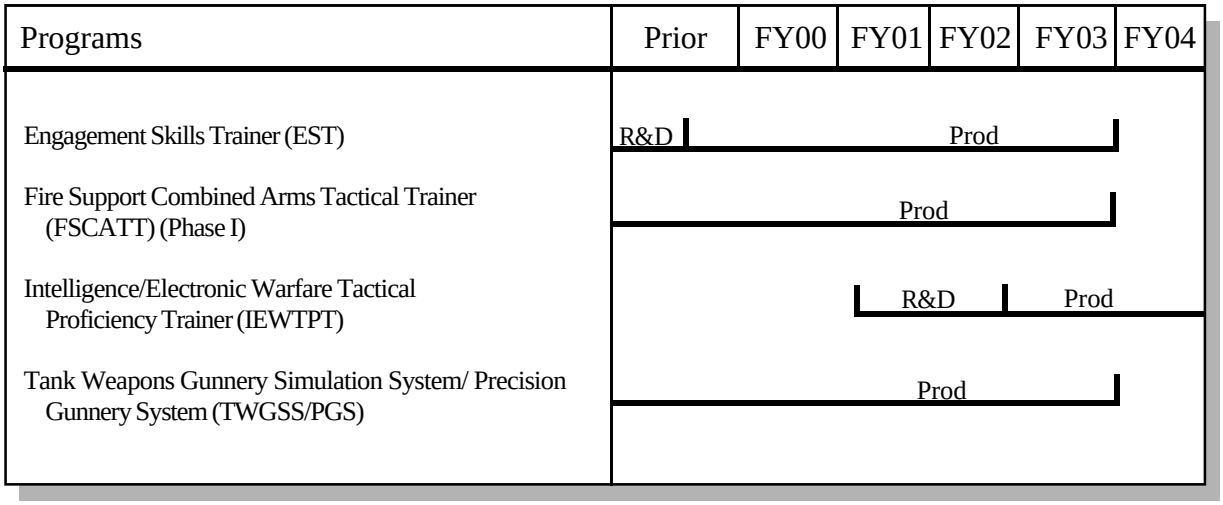
The Force-on-Force engagement training family of devices provides commanders and trainers with the means to conduct realistic combined arms and field training exercises. The Simulated Area Weapons Effects/Multiple Integrated Laser Engagement System (SAWE/MILES II) devices will simulate the effects of common indirect fire weapons, including area effects of land mines, artillery fires, and NBC agents, plus a block upgrade to the direct fire MILES system. Initial

# Force-on-Force Training (Cont)

production is completed. Full rate production started in FY98. The ability of these systems to accurately assess casualties provides opposing force commanders and their troops with a near real-time determination of their individual and unit fighting skills. Future efforts will examine approaches to provide Force-on-Force engagement capability for operation during obscured conditions and for the JRTC Military Operations in Urban Terrain (MOUT) Phase II. MILES 2000 is a program to replace basic MILES devices at home station with state-of-the-art laser-based Tactical Engagement Simulation devices. The Homestation Instrumentation Training System (HITS) will provide a mobile, instrumented range for free maneuver company level armored and infantry exercises. HITS will support digitized unit training and is mobile to accommodate deployed sustainment training. The CMTC Live Fire OIS (CMTC LF/OIS) will provide a live fire, instrumentation system for 7th Army Training Centers which will collect live fire exercise data as well as force-on-force maneuver engagement data for analysis and after action review.

Maneuver Combat Training Center (MCTC) Army Battle Command System (ABCS) will integrate Army digital tactical systems at each of the three Maneuver Combat Training Centers.

# Soldier/Crew Served Weapons Training




Current Soldier/Crew Served Weapons Training requirements will aid in meeting the training needs of both active Army and Army National Guard (ARNG) units. The Tank Weapons Gunnery Simulation System (TWGSS) and Precision Gunnery System (PGS) integrates mature, eye-safe laser technology to develop an appended precision gunnery training system for armor and infantry fighting vehicles. FSCATT (Phase I) will be a "system of systems" that will integrate the training of the field artillery gunnery team to allow the forward observer, fire direction center and firing battery personnel to train either independently or simultaneously in a closed loop environment without the use of live ammunition. The Engagement Skill Trainer (EST) will train and evaluate marksmanship training for dismounted soldiers.

# PM TRADE Support to System PMs

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| Advanced Gunnery Training System (AGTS) | | | Prod | | | |
| AH/OH-6 Little Bird Combat Mission Simulator | | | R&D | | | |
| Bradley A3 Training Systems | | R&D | | Prod | | |
| Full Crew Interactive Simulation Trainer-Bradley (FIST-B) | | R&D | | Prod | | |
| Crusader Training Systems | | | R&D | | Prod | |
| Future Scout & Cavalry Vehicle Training System | | | | R&D | | |
| Grizzly/Wolverine Training Systems | R&D | | | Prod | | |
| Improved Target Acquisition System (ITAS) | | | Prod | | | |
| Javelin Field Tactical Trainer (FTT) and Basic Skills Trainer (BST), & Missile Simulations Round (MSR) | | | Prod | | | |

System devices cross a full spectrum from individual/operator trainers to collective and institutional trainers. System devices depicted represent those in which PM TRADE currently has an active role. In some cases, procurement of the devices will be through PM TRADE, while in other instances, acquisition of the devices will be accomplished by the system PM.

# Equipment Operator/Maintenance Training

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers | | | Prod | | | |
| Fire Fighting Training System (FFTS) | | | Prod | | | |
| MLRS Maintenance Trainers | | | Prod | | | |

The complexity of new equipment requires cost-effective, innovative approaches that provide an effective method of learning/practicing skills. This group of training devices focuses on equipment operator/ individual maintenance training.

# PM TRADE Narrative Descriptions

**Abrams M1A2 and Bradley M2/M3 (A3) Maintenance Trainers**
The M1A2 and M2A2 maintenance trainers are used to train critical unit and direct/general support tasks required by the actual system. The trainers develop critical skills including system operation, fault diagnosis, troubleshooting, adjustments, removal/replacement, and repair tasks. The M1A2 type of devices include a Hands-on-Trainer (HOT), a Diagnostic/Troubleshooting (D/T) trainer, and a DSESTS LRU Simulator (DLS). (MAJ Iddins, (407) 384-5265, AMSTI-PM TRADE-GCTS)

**Advanced Gunnery Training System (AGTS)**
The AGTS trains M1A2, M1A2 SEP, M2/M3A3 and LAV gunners and commanders in crew section and platoon settings. The system will train both precision and degraded gunnery skills in simulated combat conditions. Training includes initial qualification and sustainment training in desert/European environments. The Basis Of Issue is one system per battalion/squadron level units. AGTS has considerable FMS activities. (MAJ Iddins, (407) 384-5265, AMSTI-PM TRADE-GCTS)

**AH/OH6 "Little Bird" Combat Mission Simulator**
This is a high fidelity flight simulator/combat mission simulator (CMS) for the AH/OH-6 Little Bird helicopter flown by the 160th Special Operations Aviation Regiment (SOAR). The Little Bird CMS will train flight and combat mission skills to AH/OH6 crews. The simulator is required to be integrated into the 160th SOAR training suite and be compatible with the existing MH-60K and MH-47E CMSs. (MAJ Thurgood, (407) 384-5224, AMSTI-PM TRADE-ACTS)

**Bradley A3 Training Systems**
PM TRADE is supporting PM Bradley in supplying training systems to support the latest Bradley Fighting Vehicle, M2/M3A3. (Ms. Harrison, (407) 384-5170, AMSTI-PM TRADE-GCTS)

**Combat Maneuver Training Center Live Fire/Objective Instrumentation System (CMTC LF/OIS)**
The program for the Combat Maneuver Training Center (CMTC) LF/OIS is a US Army project to develop an instrumented system to facilitate live fire training at the Army's three Combat Training Centers (CTCs) and other deployed locations. The USMC is participating in the on-going survey for use in developing a Range Instrumentation System (RIS) at USMC training centers. A market survey is in progress to study requirements and examine available technology. The initial survey emphasis is on requirements for the CMTC in Germany (the only deployable requirement) and the USMC. Results of the survey will be leveraged for use in the National Training Center (NTC) Objective Instrumentation System (OIS) program, the future Joint Readiness Training Center (JRTC) OIS and the Homestation Instrumentation Training System (HITS) program. The live fire concept involves instrumenting battalion size task forces -- armor, artillery, aviation and dismounted soldier/marine assets -- conducting live fire, combined arms, maneuver operations against ground and air targetry. Live fire operations will be employed except where safety or range constraints necessitate the use of simulation. The system will collect, process, analyze and display training performance data for use in developing battlefield scenarios, to help monitor and control range operations, and to prepare effective After Action Reviews and Take Home Packages. The system will be modular in design so the system elements can be applied to overlapping requirements for the CMTC, LF/OIS, NTC OIS, JRTC OIS and HITS programs, thus eliminating duplication of effort in design and development and promoting cost efficiency. The system for Germany will be a deployable system which can be deployed by truck, rail, air, and ship; and which can be set up quickly once it reaches the deployment site. (Mr. Ralph, (407) 384-5211, AMSTI-PM TRADE-LTS)

# PM TRADE Narrative Descriptions (Cont)

**Crusader Training Systems**
Current concepts include: embedded training for unit sustainment of both operator and maintainer skills; embedded Tactical Engagement Simulation (TES) capability for Force-on-Force training; and stand alone and networked training devices for the institution. PM TRADE provides support in an advisory role as part of the Integrated Product Team for the Crusader program. Crusader is the next generation of 155mm howitzer and Crusader (RSV) is its companion resupply vehicle. (CPT Wiley, (407) 384-5179, AMSTI-PM TRADE-GCTS)

**Engagement Skills Trainer (EST)**
The Engagement Skills Trainer (EST) is a unit and individual indoor, multipurpose, multilane, small arms, crew-served and individual weapon training simulator. The EST will train and evaluate individual marksmanship training for initial entry soldiers, sustainment training for weapons' qualification, and unit collective gunnery and tactical training for dismounted Infantry, Scout, Engineer, and Military Police Squads. (Mr. Brunat, (407) 384-5278, AMSTI-PM TRADE-GCTS)

**Fire Fighting Training Systems (FFTS)**
The FFTS is a Congressionally mandated program that uses natural/propane gas in a computer controlled, live-fire simulation, Fire Fighting Training Systems (FFTS). Initial procurement is for four Structural (STRU) and two Aircraft Rescue Fire Fighting (ARFF) systems with outyear options for an additional 15 structural and 8 ARFF systems. (Mr. Ley-Soto, (407) 384-5174, AMSTI-PM TRADE-GCTS)

**Fire Support Combined Arms Tactical Trainer (FSCATT) Phase I**
The FSCATT provides initial and sustainment training for the entire gunnery team. It integrates tactical equipment and simulated howitzer devices in a closed loop network and create a battery-level command and control tactical trainer. FSCATT is the U.S. Army's only Defense Acquisition Pilot Program as it incorporates procurement initiatives similar to commercial industry. (CPT Wiley, (407) 384-5179, AMSTI-PM TRADE-GCTS)

**Full Crew Interactive Simulation Trainer - Bradley (FIST-B)**
FIST-B is envisioned to be an appended full crew interactive training device that is used to train A0 - A2 Bradley crews. Fixed and moving targets will be presented on COTS monitors to the Commander, Gunner and Driver in a synthetic environment under simulated combat conditions. (MAJ Iddins, (407) 384-5265, AMSTI-PM TRADE-GCTS)

**Future Scout and Cavalry Vehicle Training Systems**
PM TRADE is assisting TARDEC and the Armor School in the determination of training requirements and the anticipated development of training systems for this new tactical vehicle. (LTC Fair, (407) 384-5160, AMSTI-PM TRADE-GCTS)

**Grizzly/Wolverine**
PM TRADE is supporting PM Grizzly and PM Wolverine in developing training systems for the Army's newest Engineering battlefield vehicles for the U.S. Army, the GRIZZLY and the WOLVERINE. A competitive acquisition combining both systems is planned. (Mr. Raisler, (407) 384-5175, AMSTI-PM TRADE-GCTS)

# PM TRADE Narrative Descriptions (Cont)

**Homestation Instrumentation Training System (HITS)**
The HITS will provide state-of-the-art equipment and systems to simulate and stimulate tactical systems. It will include a tactical engagement simulation system and data collection instrumentation to provide a deployable/ transportable training and mission rehearsal capability to division-level maneuver units for battalion task force Force-On-Force collective training exercises employing direct and indirect fire. The HITS system will integrate and leverage embedded training capabilities resident in new and modified Army weapon systems with live, virtual and constructive training simulation systems. The HITS devices will detect and measure physical characteristics and events, record tactical communications, maintain system status and player location, and process event data. HITS will provide the capability to present after action reviews which incorporate recorded audio/visual and event data to provide timely performance feedback to the soldiers. Production will provide HITS to 13 separate CONUS and OCONUS locations plus three regional reserve component maneuver units. (Mr. Anderson, (407) 384-5214 AMSTI-PM TRADE-LTS)

**Improved Target Acquisition System (ITAS)**
ITAS is a tactical improvement to the TOW missile sight as it provides improved aided target tracking, laser range finding, increased target recognition ranges, and Embedded Training. ITAS is used on ground mount and HMMWV TOW missile systems. Training devices for ITAS provide for Force-on-Force training, outdoor Precision Gunnery training, and indoor Gunnery Training. (Mr. Sims , (407) 384-5181, AMSTI-PM TRADE-GCTS)

**Intelligence and Electronic Warfare Tactical Proficiency Trainer (IEWTPT)**
The IEWTPT will provide realistic battle command training to battle commanders, battle staff and soldier operators who drive the intelligence systems. The IEWTPT consists of functional groupings of capabilities referred to as the Target Signature Arrays (TSA), Technical Control Cells (TCC) and a constructive simulation. The TSA is embedded into the IEW operational equipment that allows the receipt and translation of the TCC feeds. The TCC evaluates IEW exercises, controls exercise scenarios, records/stores/replays scenarios and queries and cues the TSA. A constructive simulation interface presents information to the TCC and produces context for the projected family of collectors. (Ms. Morris, (407) 384-5146, AMSTI-PM TRADE-ACTS)

**Javelin**
The Javelin is a fire and forget system replacing the wire guided Dragon as the Army and Marine medium anti-tank missile. There are three training devices being developed concurrent with development of the tactical system. The Field Tactical Trainer (FTT) is a MILES based force-on-force trainer that is used with the tactical Command Launch Unit (CLU). The Basic Skills Trainer (BST) simulates the complete tactical engagement sequence using computer generated images to teach tactical and technical gunnery skills. The Missile Simulation Round (MSR) is a three dimensional full size replica, nonoperational mock-up of the Javelin tactical round. PM TRADE is supporting PM Javelin in an advisory role in the acquisition of the training devices. (MAJ Iddins, (407) 384-5265, AMSTI-PM TRADE-GCTS)

# PM TRADE Narrative Descriptions (Cont)

**Joint Readiness Training Center (JRTC) Military Operations Urbanized Terrain (MOUT) - Instrumentation System (IS) (Phase II)**

This project will develop and field an instrumentation system to satisfy a unique requirement to support MOUT assessment at the JRTC, Fort Polk, LA. The system is required to realistically duplicate a MOUT environment. System capabilities include: conduct of live fire exercises, assessment of company team level operations, monitor individual movements throughout the complex, capture real-time data for after action reviews, control targets from remote locations with reaction time/hit/miss reporting capability, and provide centralized visual observation and control of facilities. (Ms. Kahl, (407) 384-5194, AMSTI-PM TRADE-LTS)

**Longbow Apache (LBA) Tactical Engagement Simulation System (TESS) Combat Training Centers (CTC) Integration**

This system integrates the TESS for Longbow Apache into the Instrumentation System at each of the Army's CTC. It will replicate weapons capabilities and aircraft vulnerabilities on the CTC battlefield and provides instrumentation system for Non-Line of Sight (NLoS) engagements at the CTCs. It allows for LBA to participate in Force-On-Force training at the CTCs, and provides weapons simulation for NLoS engagements not currently supported. (Mr. Labalbo, (407) 384-5150, AMSTI-PM TRADE-ACTS.)

**Maneuver Combat Training Centers Integration of Army Battle Command Training Systems (MCTC/ABCS)**

The project will provide the MCTC Instrumentation Systems (IS) the capability to control and exchange data with tactical digital systems during rotations. An interface will be created to allow the 2 way exchange of digital information between the MCTC IS and a local area network of ABCS and other systems. A common distributed simulation protocol will allow hosting of future virtual or constructive capabilities such as CSTAR and WARSIM. The system will be integrated with all live Combat Training Centers: NTC, JRTC, AND CMTC. (Mr. Anderson (407) 384-5214, AMSTI-PM TRADE-LTS)

**Multiple Integrated Laser Engagement System (MILES) 2000**

The MILES 2000 program will replace and update existing Basic MILES devices to the MILES 2000 standard. The MILES devices will be based on laser engagement simulation technology already fielded and proven through the Basic MILES program and will meet and, where applicable, exceed the performance baseline of Basic MILES devices. The devices shall replicate the ranges, vulnerabilities, weapon, and ammunition characteristics of the direct fire weapons being simulated for laser-based force-to-force training. The devices shall be configured to cover a wide range of existing ground combat weapons and their capabilities. MILES 2000 will be capable of being readily adaptable to new weapons or modifications to existing weapons. (Mr. Wolfinger, (407) 384-5196, AMSTI-PM TRADE-LTS)

**Multiple Launch Rocket System (MLRS) Maintenance Traine**

The MLRS-Maintenance Trainers are used to train critical unit and direct/general support tasks required by the actual system. The trainer will train students in system operation, fault diagnosis, troubleshooting, and removal/replacement and repair of tanks. (MAJ Iddins, (407) 384-5265, AMSTI-PM TRADE-GCTS)

# PM TRADE Narrative Descriptions (Cont)

**National Training Center Objective Instrumentation System (NTC-OIS)**
The NTC-OIS will be a fixed site, sufficient, automated data collection and analysis system that will control the exercise and provide objective training performance feedback to support the train-assess-train model. The NTC-OIS will be an integrated system of computer software and hardware; workstations; databases; voice and video recording; production, and presentation equipment; interface devices, and communications systems to accomplish the following functions: Exercise Planning, System Preparation, Exercise Management, Training Performance Feedback, and System Support. The NTC-OIS will collect exercise data from Tactical Engagement Simulation (TES) Training Aids, Devices and Simulations. The system will monitor and control the training exercise, process/display/analyze collected exercise data, prepare/present standardized training performance feedback, and archive training performance information for external NTC use. (LTC Harper, (407) 384-5148, AMSTI-PM TRADE)

**OH-58D Air Ground Engagement System II (AGES II)**
This system incorporates MILES and the instrumentation interface on the OH-58D Kiowa Warrior. System will allow these aircraft to participate in force-on-force training exercises at the CTC. Weapons simulated include Hellfire, rockets and 50mm cannons. Systems also include eye-safe laser rangefinders and simulated effects of aircraft survivability equipment employment. (Mr. LaBalbo, (407) 384-5150, AMSTI-PM TRADE-ACTS)

**Simulated Area Weapon Effects Lightweight Player Detection Device (SAWE RF LTWT PDD)**
This program will miniaturize (under six pounds added weight) the instrumented Player Detection Devices (PDDs) used in the SAWE/MILES II system at the Combat Training Centers. In addition, this program will up date the existing SAWE/MILES II Systems at the CTCs. (Mr. Youmans, (407) 384-5234, AMSTI-PM ITTS-IMO)

**Simulated Area Weapon Effects (SAWE)/MILES II**
SAWE provides the capability to simulate accurately and in real-time, the effects of indirect fire, mines and chemical contamination in force-on-force exercises. Use of Global Positioning System (GPS) technology will provide accurate position location. SAWE and MILES II have been integrated to provide a single system capable of both direct fire and area weapons casualty effects. The system will provide time tagged event storage and aspect angle discrimination between front-flank-rear engagements. Source production provides SAWE/MILES II to the three Combat Training Centers. The follow on SAWE/MILES-II contract purchases additional systems which will go toward filling identified shortfalls at the three CTCs. Additionally, FY99 and outyears will concentrate on acquiring kits for emerging platforms like Paladin, OSV, OSTV, Abrams M1A2 SEP, Bradley A3, etc. (MAJ McCracken, (407) 384-5213, AMSTI-PM TRADE-LTS)

# PM TRADE Narrative Descriptions (Cont)

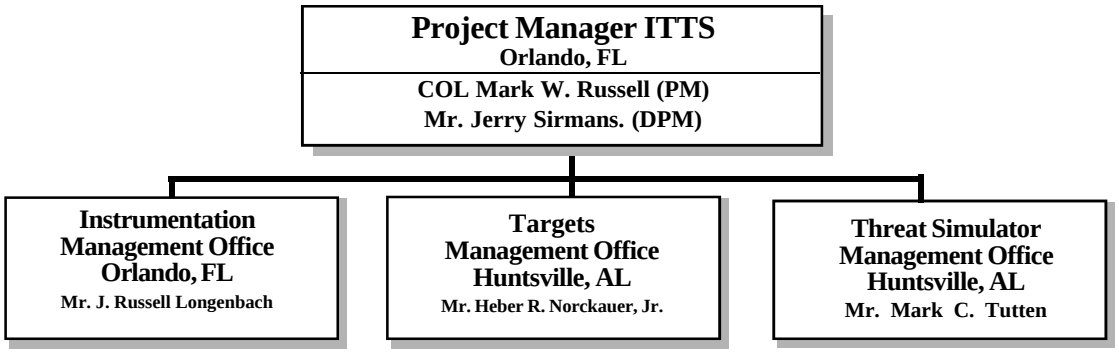
**Tank Weapons Gunnery Simulation System (TWGSS) Precision Gunnery System (PGS)**
TWGSS/PGS is an appended combat vehicle precision gunnery training device that provides a means to realistically train and sustain gunnery and tactical combat skills. TWGSS/PGS is used on Abrams Tanks, Bradley Fighting Vehicles and the Light Armored Vehicle. The device uses laser technology to provide realistic tracer, burst and obscuration effects, and component commonality to both the gunner and vehicle commander through the vehicle sights. The system accurately calculates and records the lethality of the hit for on-board and after action review. (Ms. Harrison, (407) 384-5170, AMSTI-PM TRADE-GCTS)

# Project Manager Instrumentation, Targets and Threat Simulators (PM ITTS)

*SECTION* 3

## Colonel Mark W. Russell

## Organization




## Mission

**Manage the research, development, design, acquisition, fielding and modification of targets, threat simulators and major instrumentation required for technical and operational test and evaluation (T&E) for the U.S. Army**

**Operate and maintain targets for T&E and training**

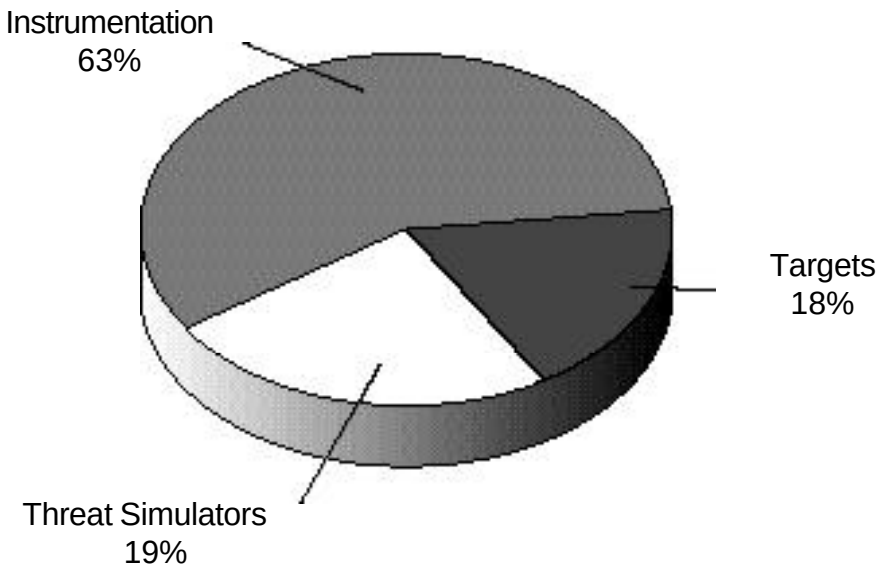
# PM ITTS Characteristics

**Instrumentation**
- Electromagnetic, optical, audio, mechanical, etc.
- Detect, measure, record, telemeter and process
- Analyze physical parameters or quantities
- Used for technical or operational testing

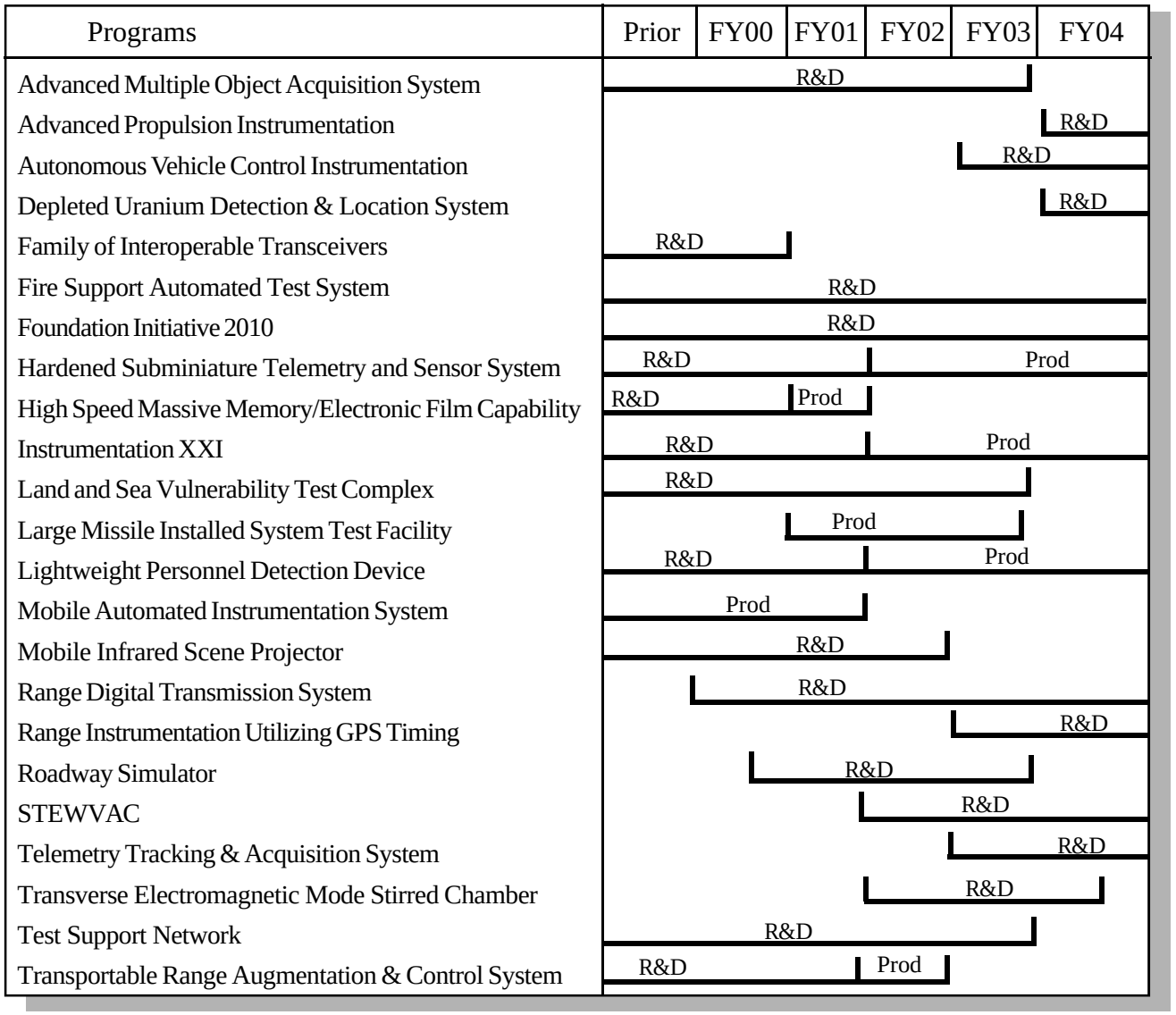
**Targets**
- Ground and airborne
- Support testing and training
- Economical and expendable
- Remotely controlled or stationary
- Often destroyed in test and training

**Threat Simulators**
- Provides appearance of actual threat
- Prescribed degree of fidelity
- Supports testing and training
- Not destroyed in test and training
- One-Stop-Shop for Army Threats

# Project Manager Instrumentation, Targets and Threat Simulators Relative Investment FY00-04



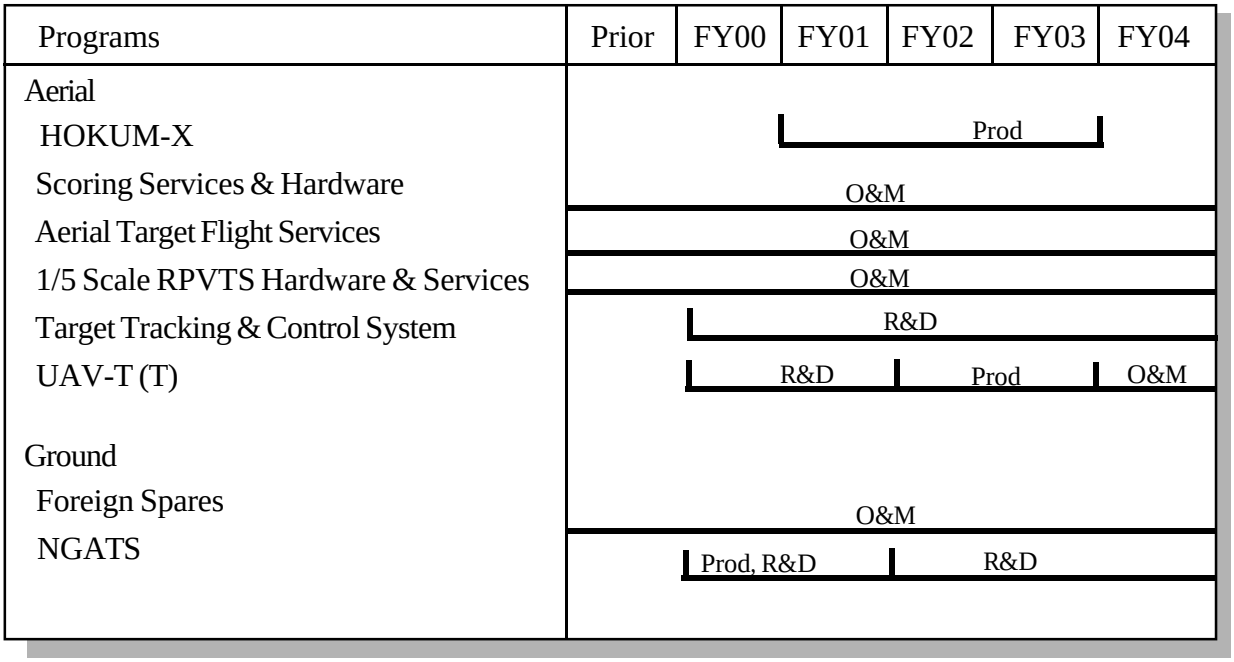
# Major Instrumentation




The **Instrumentation Management Office (IMO)** is responsible for the development and acquisition of major instrumentation for the Army's developmental and operational test ranges. Major instrumentation is generally defined as those efforts that are not system specific, may have joint applications, have high visibility or a large dollar value (generally a total acquisition cost in excess of $5M). Additionally, the IMO manages efforts funded **by OSD's Central Test and Evaluation Investment Program (CTEIP)**, which sponsors the **Resource Enhancement Program (REP)** and the **Joint Improvement and Modernization (JIM)** Program. The Army Major Instrumentation efforts are directed to ensure that the Army and DoD have the capability to test and evaluate complex, high technology weapon systems. As new technologies are developed and integrated

into weapon systems, new and innovative methods of test and evaluation must be available in advance of the weapon systems to be tested. Testing requirements are shifting away from weapon specific instrumentation and moving toward advanced generic capabilities that have application to whole families of systems. Perhaps the greatest challenge will be the efficient and cost effective use of test resources, ranges, test weapons, instrumentation and personnel. One goal of the Army instrumentation effort is to develop and maintain the capability to test and evaluate the next generation and future generations of weapons systems to ensure that impartial, unbiased evaluations are conducted to support Army developmental and operational testing and training.

## Targets




**The Targets Management Office (TMO)**, located at Redstone Arsenal, AL is a customer oriented team dedicated to excellence in target system development, acquisition and operation. By combining state-of-the-art target technology and advanced computer automation techniques, the TMO manages the development, acquisition and operation of both aerial and ground target systems for the U.S. Army. As Reliance Lead for both Rotary Wing and Mobile Ground Targets, TMO is committed to providing today's weapon system user with unparalleled target capabilities and support.

# PM ITTS Narrative Descriptions

**INSTRUMENTATION:**

**Advanced Multiple Object Acquisition System (AMOAS)**

This CTEIP project will design, develop and deliver the next generation multi-target acquisition system with a very wide field of view, high resolution multiple-object acquisition and tracking instrumentation, and a global shared-memory database manager for command and control with high speed transfer links. (Mr. Holweck, (407) 384-5237, AMSTI-ITTS-I)

**Advanced Propulsion Instrumentation (API)**

API augments existing instrumentation and develops new technology to test advanced propulsion systems including electric drives, integrated power systems, and alternative fuels being integrated into combat and tactical vehicles. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Autonomous Vehicle Control Instrumentation (AVCI)**

The AVCI will accurately and safely test telerobotic, robotic and autonomous vehicles at Aberdeen Test Center's Munson, Churchville and Perryman test courses. It will also develop a modular instrumentation suite for autonomous (i.e., without human drivers) control of test vehicles which will be non-intrusive, easy to install, and simple to maintain. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Depleted Uranium Detection and Location System**

The Depleted Uranium Detection and Location System will provide a method to detect and precisely locate buried depleted uranium penetrators, thereby allowing cleanup of contamination on test and training ranges. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Family of Interoperable Transceivers (FIT)**

This CTEIP project will develop a Joint Datalink Standard that defines the protocols for interoperability of transmitting digital data via radio networks from ground to ground and ground to air. The datalinks developed will provide general purpose RF capability that can be used in a wide variety of military test and training applications. (Mr.Meadows, (407) 384-5267, AMSTI-ITTS-I)

**Fire Support Automated Test System (FSATS)**

FSATS is an automated test instrumentation system providing test planning tools, data collection and archiving, data reduction, simulation, stimulation, and test monitoring capabilities for fire support systems such as the Advanced Field Artillery Tactical Data System (AFATDS). It consists of mobile truck-mounted large nodes and portable Pentium based computers as small nodes. (Mr. Nolen, (407) 384-5240, AMSTI-ITTS-I)

**Foundation Initiative 2010 (FI2010)**

FI2010 is an Army-led CTEIP funded program to build a Joint Synthetic Test and Evaluation Battlespace that combines four separate efforts, previously managed by each Service, to cost effectively generate complex test and training environments that may consist of live, virtual, and constructive systems at geographically dispersed sites. (Mr. Vuong, (407) 384-5238, AMSTI-ITTS-I)

# PM ITTS Narrative Descriptions (Cont)

**Hardened Subminiature Telemetry and Sensor System (HSTSS)**
A joint Army and CTEIP funded program, HSTSS will develop and demonstrate a new generation of rugged, miniaturized on-board instrumentation measurement technologies applicable to weapon system flight tests. The technologies will be relatively low-cost and will consist of several configurations designed to accommodate applications in the direct fire, indirect fire, and missile system mission areas. (Mr. Colangelo, (407) 384-5236, AMSTI-ITTS-I)

**High Speed Massive Memory/Electronic Film Capability (HSMM/EFC)**
A CTEIP funded effort, HSMM/EFC will design and produce a high-speed medium capable of acquiring data from a focal plane staring array in real time, allow for rapid turn-around of reduced data, and provide integration with real time generator-based constructive simulations. (Mr. Holweck, (407) 384-5237, AMSTI-ITTS-I)

**Instrumentation XXI**
Instrumentation XXI provides measurement of essential audio, video, digital information, and target pairing upgrades required to collect credible and repeatable test data from Army After Next digital battlefield weapon and command, control, and communication systems. Specifically, the development will include: high resolution geometric pairing in a dirty battlefield environment; a distributed synthetic electronic warfare (EW) capability; upgrade to the existing MAIS data communication rate; and enhanced data reduction and analysis tools. (Mr. Wolf, (407) 384-5246, AMSTI-ITTS-I)

**Land and Sea Vulnerability Test Capability (LSVTC)**
LSVTC is a CTEIP funded instrumentation system that will provide for the expansion and development of existing instrumentation and facilities for multi-service vulnerability testing in the land, sea, and littoral regions and provide the warfighter realistic training opportunities which include soldier to equipment interface at the UNDEX Test Facility at Aberdeen Proving Grounds. (Ms. Castillo, (407) 384-5235, AMSTI-ITTS-I)

**Large Missile Installed System Test Facility (LMISTF)**
LMISTF will provide White Sands Missile Range with the ability to significantly reduce the costs and risks associated with developmental tests, stockpile surveillance, and reliability tests by greatly reducing the number of missile rounds required for conventional (destructive) flight testing on the Army's TACMS, MLRS, Patriot, Navy SM-2, and Air Force AMRAAM weapon systems. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Lightweight Personnel Detection Device (LPDD)**
LPDD will develop, test, and field a dismounted soldier instrumentation system for tactical engagement simulation at the Combat Training Centers. This man-worn system will provide a MILES II compatible small arms transmitter and laser detectors and a real-time casualty assessment capability. LPDD will also provide soldier position and location and connectivity to a core instrumentation system. (Mr. Youmans, (407) 384-5234, AMSTI-ITTS-I)

# PM ITTS Narrative Descriptions (Cont)

**Mobile Automated Instrumentation System (MAIS)**
MAIS is a fully mobile, high fidelity, encrypted, real-time casualty assessment and test instrumentation system that supports operational and force development testing of current and future weapon systems. It provides real-time exercise and monitoring control of up to 1830 player units. (Mr. Wolf, (407) 384-5246, AMSTI-ITTS-I)

**Mobile Infrared Scene Projector (MIRSP)**
MIRSP provides enhanced simulation and test capabilities for evaluating electro-optical sensors and infrared (IR) imaging subsystems while installed on their tactical ground vehicles and aircraft. MIRSP will enable projection of accurate, dynamic, and realistic IR scenes into the entrance aperture of imaging IR sensors for repeatable test and evaluation. (Mr. Lastra, (407) 384-5239, AMSTI-ITTS-I)

**Range Digital Transmission System (RDTS)**
RDTS will provide a digital, fiber-optic range network which combines automated and integrated voice, data, and video into a single transport system for Yuma Proving Ground. The network will include advanced encryption capabilities and automatic and remote control for switching circuit capabilities for test configuration and total network data arrangement control. (Mr. Janisz, (407) 384-5261, AMSTI-ITTS-I)

**Range Instrumentation Utilizing Global Positioning System (GPS) Timing**
Range Instrumentation Utilizing GPS Timing replaces the costly and resource-intensive system of providing precise range timing signals with inexpensive GPS receivers interfaced directly to range instrumentation assets. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Roadway Simulator (RWS)**
RWS is a CTEIP funded program that will provide land vehicle testing for combat vehicles, trucks, trailers, and associated payloads at Aberdeen Proving Grounds. Various tests, including performance, safety, and endurance will be able to be conducted in a controllable, repeatable environment. (Mr. Vuong, (407) 384-5238, AMSTI-ITTS-I)

**Subsystem Test and Evaluation with Virtual Applications Capability (STEWVAC)**
STEWVAC will develop enhancements to core Redstone Technical Test Center modeling and simulation and test and evaluation capabilities to test modern weapon systems equipped with advanced visual, imaging infrared, and radar sensors. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

**Telemetry Tracking and Acquisition System (TTAS)**
TTAS will develop mobile, state-of-the-art telemetry systems that will reduce turn-around time, potential human errors, and operating personnel. It will use new frequencies and operate with increased data rates. TTAS will be capable of being integrated into a single mobile system to simultaneously acquire, track, record, and perform automatic diagnostics and set-ups under remote control. TTAS will use GPS data, provide data display and multiplexing, and perform analysis and relaying. (Mr. Longenbach, (407) 384-5230, AMSTI-ITTS-I)

# PM ITTS Narrative Descriptions (Cont)

**Transverse Electromagnetic Mode Stirred Chamber (TEMMS)**
TEMMS is a CTEIP sponsored project designed to construct a large, shielded enclosure which permits efficient generation of intense, high-level electric fields for RF illumination of large test volumes within a controlled environment. TEMMS will allow for the complete evaluation of E3 effects on oversized combat vehicles and aircraft. (Mr. Meadows, (407) 384-5267, AMSTI-ITTS-I)

**Test Support Network (TSN)**
TSN is a three phased commercial integration project to modernize and secure the backbone telecommunications and data transmittal network from 3000 surveyed test instrumentation sites on the three million acre White Sands Missile Range. TSN will provide transmission of analog and digital voice, data, telemetry, and video signals in a single transport system. It will allow automated and remote network management and control while reducing range operational and support costs. (Mr. Holweck, (407) 384-5237, AMSTI-ITTS-I)

**Transportable Range Augmentation and Control System (TRACS)**
TRACS is a CTEIP funded project that provides a self-contained, transportable range control system capable of conducting test mission planning, execution, real time data collection and processing, mission control, flight safety, and post mission data analysis for both CONUS and OCONUS ballistic missile tests. TRACS can support multiple simultaneous ballistic missile intercepts while collecting and displaying multiple sensor data. (Mr. Meadows, (407) 384-5267, AMSTI-ITTS-I)

## TARGETS

**Aerial Targets:**

**Aerial Targets Flight Services**
Operation and maintenance contract for MQM-107/MQM-34 sub scale fixed wing targets, QH-50 sub-scale helicopter targets and the QUH-1 full-scale rotary wing target system. Target aircraft are flown at numerous CONUS/OCONUS ranges to support ADA training, RDT&E for the tri-services and Foreign Military Sales requirements. Re-competition of these services is scheduled for FY00. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

**HOKUM-X**
Full scale aerial target, which emulates the Russian Ka-50 helicopter and will support major weapon system test and evaluation. The development effort is a Defense Development Sharing Program - cooperative development with the Canadian Commercial Corporation. The production effort will be awarded through full and open competition in the FY01 time frame. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

**Scoring Service & Hardware**
Contractor provided support of Gunner Qualification against sub-scale aerial targets through operation and maintenance of ground station and scoring devices, tailored to each target and provided as GFE. Contract is scheduled for re-competition in FY02. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

# PM ITTS Narrative Descriptions (Cont)

**Unmanned Aerial Vehicle-Tactical (Target) (UAV-T(T))**
A threat representative tactical class UAV target to support major weapon systems test and evaluation. Has potential application for Air Defense Artillery training support. Competitive RDT&E effort planned for FY00 and production in FY02. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

**1/5 Scale Remotely Piloted Vehicle Target System and Services**
Hardware and services providing low cost, realistic live fire training scenarios to support today's weapon system users. Re-competition of this effort is anticipated for FY01. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

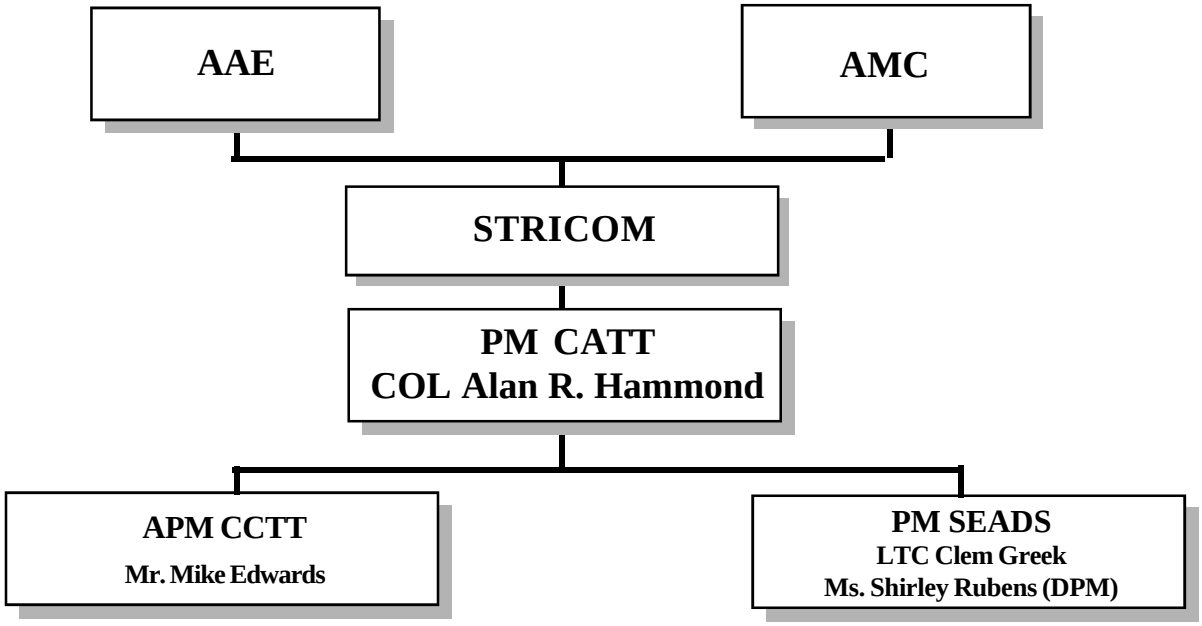
**Ground Targets:**

**New Generation Army Targetry System (NGATS)**
A mobile, transportable, and deployable suite of systems capable of continuous support during unit training periods. NGATS will be used by unit commanders to support training worldwide during live fire exercises at home station, combat training centers (NTC, JRTC, CMTC) and OCONUS theaters of operations. Full and open competitive contract awards are scheduled for FY00. (Mr. Norckauer, Jr., (256) 876-4077 AMSTI-ITTS-Q)

# Project Manager Combined Arms Tactical Trainer (PM CATT)

*SECTION* 4

## Colonel Alan R. Hammond




## Combined Arms Tactical Trainer

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| Aviation Combined Arms Tactical Trainer /Aviation Reconfigurable Manned Simulator (AVCATT-A) | R&D | Prod. | | | | |
| Close Combat Tactical Trainer (CCTT) | R&D | Prod/P3I | | | | |
| Synthetic Environment (SE) Core (AVCATT-A) | R&D | | | | | |

The Combined Arms Tactical Trainer (CATT) encompasses development, fielding, and support of a complete Combined Arms virtual training environment in which manned simulators, operating on a Synthetic Combined Arms Battlefield, are used as a means to train collective, combined arms tasks. CATT provides a "combat area" on which combatants and support forces can engage in actual warfare without having to consider peacetime safety, environmental or terrain restrictions. The training audience performs collective tasks typically in a simulator representing the tactical system. For example, the Close Combat Tactical Trainer (CCTT) provides the virtual environment, including a robust Semi-Automated Force, Terrain Databases (NTC and European-like), manned simulators for the M1 family of ranks, the M2/M3 Bradley Fighting Vehicles, and other selected

Mechanized Infantry vehicles. CCTT provides workstations to introduce the capabilities and effects of the other Combined Arms, Combat Support, and Combat Service Support elements on the battlefield. As the initial CATT System, CCTT provides the architecture, infrastructure, and software products which form the "core" of the CATT capability. Future requirements will result in expansion of the synthetic environment and a capability to support addition of manned simulators focusing on Aviation, Air Defense, Fire Support, and Engineer training audiences. Previously, separate acquisition programs were identified for AVCATT, ADCATT, FSCATT and ENCATT. Concepts have evolved and are now based on an overarching strategy referred to as Synthetic Environment (SE) Core.

Under the SE Core strategy, the latest available CCTT capability will form the initial SE Core baseline. Expansion of the baseline will occur through a combination of separate STRICOM acquisition program(s), e.g. Aviation Combined Arms Tactical Trainer - Aviation Reconfigurable Manned Simulator (AVCATT-A), or through cooperative efforts with System PEO/PM's. This approach will allow new development efforts to build on a proven baseline of capability maximizing reuse, reducing testing, and providing continued improvements to all SE Core users. As SE Core matures, it will be available to support efforts across all three simulation domains (TEMO, ACR, and RDA).

The AVCATT-A is an aviation acquisition program managed by PM CATT to meet the needs of the Total Army (Active/Reserve/ National Guard) for Aviation Collective training in a Combined Arms environment. The program will include expansion of the SE Core baseline and development and production of manned, reconfigurable aviation simulators. The AVCATT-A suites will be fielded Army-wide providng the same training capabilities for Active, Reserve and National Guard units.

# PM CATT Narrative Descriptions

**Aviation Combined Arms Tactical Trainer/Aviation Reconfigurable Manned Simulator (AVCATT-A)**

An acquisition program to meet aviation collective training requirements for the 'Total Army'. The Active Component (AC): 12 Suites of AVCATT-A each containing six reconfigurable aircraft cockpits representing the AH-64A/D, UH-60L, CH-47D, and OH-58D platforms. These suites will be fully mobile and will be, upon completion of SE Core developmental work, interoperable with CCTT. For the Reserve Component (RC): Six Suites of AVCATT-A (ARMS) each containing six reconfigurable aircraft cockpits representing the AH-64A, UH-60L, CH-47D, UH-1H, AH-1F, and OH-58D platforms. These suites will be fully mobile and will be integrated with baseline SE Core (CCTT). (Ms. Hirtle (407) 384-3614, AMSTI-PM CATT)

**Bradley Advanced Training System (BATS)**

The Bradley Advanced Training System (BATS) is one of a series of simulators that is being developed to support the Bradley A3 program. The BATS trainer is a precision gunnery trainer that is an integral part of the development and test of the objective system. It allows soldiers and test personnel to become familiar with the M2A3 functionality, prior to using the actual vehicle. (MAJ Bryant, (407) 384-5167, AMSTI-PM CATT)

# PM CATT Narrative Descriptions (Cont)

**Close Combat Tactical Trainer (CCTT)**
The Close Combat Tactical Trainer (CCTT) is a distributed processing, networked simulation system which allows mechanized infantry and armor units to conduct tactical maneuver training in a combined arms, computer simulated combat environment. It is composed of various simulators replicating combat vehicles, tactical vehicles, and weapon systems of a heavy maneuver company/team interacting in real-time with each other and Semi-Automated Force (SAF) opposing forces. Units operating on the simulated battlefield are supported by Combat Support and Combat Service Support systems organic to or in direct support of the Battalion/Task Force. All battlefield operating systems are represented in the simulation (Mr. Edwards, (407) 384-3612, AMSTI-PM CATT)

**Close Combat Tactical Trainer (CCTT) P3I**
Starting in 99, work will commence on a series of Pre-Planned Product Improvements (P3I) to the base CCTT system. Some of these improvements include; M1A2 SEP Manned Modules, M2A2 ODS Manned Modules, Vehicular Intercommunication System, and After Action Review (AAR) enhancements. (Mr. Foster, (407) 384-3814, AMSTI-PM CATT)

**Synthetic Environment (SE) Core**
SE Core encompasses the development and fielding of the Army's objective CATT capabilities. SE Core includes the common infrastructure of current and future CATT training systems and provides a capability to support other SE applications. SE Core provides for an interoperable environment with products available to meet both systems and non-system requirements and also support other simulations in the TEMO, ACR, and RDA domains. The initial nucleus of the SE Core is the CCTT components and software. SE Core will expand as capabilities are added for Aviation, Air Defense, Engineer, and Fire Support. Requirements for expansion of the synthetic environment provided by CCTT are evolving. A general description of anticipated requirements are described below. (Mr. Edwards, (407) 384-3612, AMSTI-PM CATT)

**SE Enhancement (Aviation)** - See AVCATT-A

**SE Enhancement (Air Defense)**
The Air Defense expansion to the SE Core baseline is anticipated to allow Forward Area Air Defense (FAAD) units to train in a synthetic environment as part of a combined arms maneuver team. Potential requirements include manned simulators that emulate the Avenger, Bradley Linebacker and Bradley Stinger Under Army or, expanded Semi-Automated Forces (Blue and OPFOR), After Action Review expansion, expanded Command and Control modeling/interfaces, and expanded combat support and combat service support capabilities. The Air Defense expansion will allow the FAAD unit to train collective tasks in the conduct of air defense operations in conjunction with Mechanized Infantry and Armor units. (Mr. Edwards, (407) 384-3612, AMSTI-PM CATT)

**SE Core Enhancement (Engineer)**
The Engineer enhancement to the SE Core will allow Engineer units to train collective tasks associated with command and control, mobility, countermobility, and survivability on a simulated interactive battlefield. Potential requirements include a group of fully interactive simulators replicating the Combat Engineer Vehicle/M1 Breacher, Armored Vehicle Launched Bridge/Heavy Assault Bridge, M9 Armored Combat Earthmover, D7G Dozer, and Engineer Squad Carriers. Additional expansions would occur in Semi-Automated Forces, After Action Review and other support systems. (Mr. Edwards, (407) 384-3612, AMSTI-PMCATT)

# PM CATT Narrative Descriptions (Cont)

**SE Core Enhancement (Fire Support) (FSCATT Phase II)**
The Fire Support enhancement to the SE Core baseline will allow integrated combined arms training of Field Artillery Units. Potential requirements include manned modules, modeling of resupply vehicles and firefinder radars to allow MLRS crews and staff elements to conduct tactical fire support operations in conjunctions with other battlefield elements. Requirements would include expansion of the supporting synthetic environment including Semi-Automated Forces, After Action Review, Command and Control interfaces. (Mr. Edwards, (407) 384-3612, AMSTI-PMCATT)

## Product Manager Synthetic Environments and Advanced Distributed Simulations (PM SEADS)

The Product Manager for Synthetic Environment and Advanced Distributed Simulations, a subordinate PM office to PM CATT, is responsible for three interrelated mission areas: Synthetic Environments, Simulation Based Acquisition/SMART (Simulations and Modeling for Acquisition, Requirements and Training), and operation and support of the Army-owned, Core Distributed Interactive Simulation Facilities (CDFs). The PM SEADS is the Army's designated organization for integrating the synthetic environment into the virtual domain and providing other domain users (ACR and R&D) with the infrastructure to utilize synthetic environments in their own developments. The organization is responsible for implementing the Army's strategy to leverage the virtual environment (as represented by Project Manager, Combined Arms Tactical Trainer and the Close Combat Tactical Trainer (CCTT) program) for integration by other PEO/PMs into development of their virtual training systems (such as Grizzly, M2A3, Future Scout Vehicle and aviation systems). PM SEADS will accelerate reuse of the CCTT environment, thereby providing a means for other systems to avoid redundancy in development costs.

PM SEADS also provides a means for TRADOC to be actively involved in the refinement of requirements during the early phases of acquisition. This is accomplished by developing and acquiring state-of-the-art technologies to facilitate experiments at the Mounted Warfare Testbed (MWTB), Fort Knox, KY; Aviation Testbed (AVTB), Fort Rucker, AL; Land Warrior Testbed (LWTB), Fort Benning, GA; and the Operational Support Facility (OSF), at STRICOM, Orlando, FL. These test beds are the Army's primary channel to conduct concept formulation experiments and to rapidly model and test innovative solutions in the areas of training, force structure, doctrine, soldier-in-the-loop, tactics, and materiel development.

PM SEADS utilizes several contract methods, such as Broad Agency Announcements, SBIR, SETA, to meet its missions. The most widely used is the Advanced Distributed Simulation Technologies II (ADST II) contract.

# PM SEADS Narrative Descriptions

**Advanced Distributed Simulation Technologies II (ADST II)**
ADST II is a major STRICOM contract offering a wide range of professional and technical disciplines supporting advancement of Advanced Distributed Simulation (ADS) technologies. Lockheed-Martin Information Systems (LMIS) Company, Orlando, FL, was awarded the ADST II contract on 23 October 1995. The contract is structured to provide rapid response and flexibility for experimentation, prototype development, demonstrations and site activation while minimizing acquisition costs. Major areas of support include engineering (analysis, design and integration), logistics, program management, and operations/maintenance services.

The prime contractor, Lockheed Martin, teamed with Science Applications International Corporation (SAIC) and utilizes over 60 other teammates from industry and academia in support of Army efforts. This allows ADST II to access experts in many simulation fields and leverage off other Government and company initiatives. Industry representatives interested in providing their services as vendors or subcontractors, should contact the prime contractor.

Program efforts are primarily accomplished through Delivery Orders (DOs). The contract provides for independent management of each DO while allowing Systems Engineering oversight across all DOs and LSE efforts. This approach provides synergy between multiple efforts with various milestone schedules and maximizes information reuse. Information is available at http://www.stricom.army.mil/STRICOM/PM CATT/PM SEADS on delivery order objectives, conclusions and schedules. This information is available by site, domain or focus capability.

ADST II Delivery Order efforts involve research and development, analysis, implementation, training, site upgrades, demonstrations or experiments dealing with Materiel Development, Training Development, Combat Development, Test and Evaluation or Dual Use technology. (Mr. Stewart, (407) 384-3689 AMSTI-PM SEADS)

**US Army Core DIS Facilities (CDF)**
The ADST II program operates the four Core Distributed Interactive Simulation (DIS) facilities. The Operational Support Facility (OSF,) Orlando, FL, is the primary integration facility for most delivery orders and serves as the technical support and development hub for all the CDFs.

The sites have been established to develop a simulation environment, simulations & simulators in the advancement and application of Distributed Interactive Simulation technology with primary emphasis on each site's specific domain (aviation, mounted warfare, and dismounted infantry). The testbeds in coordination with the Battlelabs aid in the development of doctrine, testing, and training.

# PM SEADS Narrative Descriptions (Cont)

The CDFs provide the real-time, warfighter-in-the-loop, combined arms synthetic battlefield environment necessary to employ the model, test, model "fly before you buy/build/change/fight" approach in developing the innovations required for the Army of the 21st century. The legacy of resources from previous projects provides the user with an immediate return on investment and low start-up costs . Building on this legacy allows the user to play an integral part in shaping the future of the synthetic environment.

The Core DIS Facilities primarily support experimentation efforts including a variety of applications in Combat Development, Training Development, Materiel Development, Test and Evaluation, and Dual Use technologies. Technologies involved include Local Area Networks (LAN); Wide Area Networks (WAN); DIS and HLA protocols; virtual, constructive, and live simulations; data collection and analysis; visual systems; computer generated forces (CGF, SAFOR); virtual prototyping; C4I; Simulation Based Acquisition (SBA); and many others. Customers serviced through the ADST II contract include the Defense Modeling and Simulation Office (DMSO), Advanced Research Projects Agency, HQ DA, TRADOC Battle Labs, Schools and Centers, Army Materiel Command activities (i.e., system program managers), USSOCOM and other Joint Service activities. The Special Operations Forces (SOF) CDF, located at Hurlburtfield, FL, provides the USSOCCOM with the capability to conduct mission rehearsal and other integrated training exercises. (Ms. Rubens, (407) 384-3677, AMSTI- PM SEADS)

**Synthetic Environment Live Fire (SELF) for the Bradley M2/M3A3 Limited User Test** The SELF testing for the A3 was sponsored by Office of the Secretary of Defense (OSD) and Live Fire Testing and Evaluation (LFT&E). The initial effort investigated opportunities to integrate LFT issues in a Synthetic Environment and determine the extent that simulation could augment Live Fire Tests (LFT). Live Fire Test legislation, initially passed in 1986, requires realistic testing of weapons platforms in their combat configurations against realistic threats. The Bradley SELF effort followed the efforts demonstrated previously in the Advanced Armor Technical Demonstration (A2ATD) where the Abrams tank was evaluated in the Synthetic Environment. SELF conducted a series of tests in parallel with the Bradley A3 live tests to provide the test community with data to evaluate the test support capabilities. Although it is realized that the simulation may not replace Live Fire testing, the Synthetic Environment can provide additional data, insight into future test events, and an infrastructure in which to introduce variables without interfering with the developing system schedule. Future SELF efforts will explore Synthetic Environment approaches to testing lethality issues. (MAJ Hodge, (407) 384-3658, AMSTI- PM SEADS)

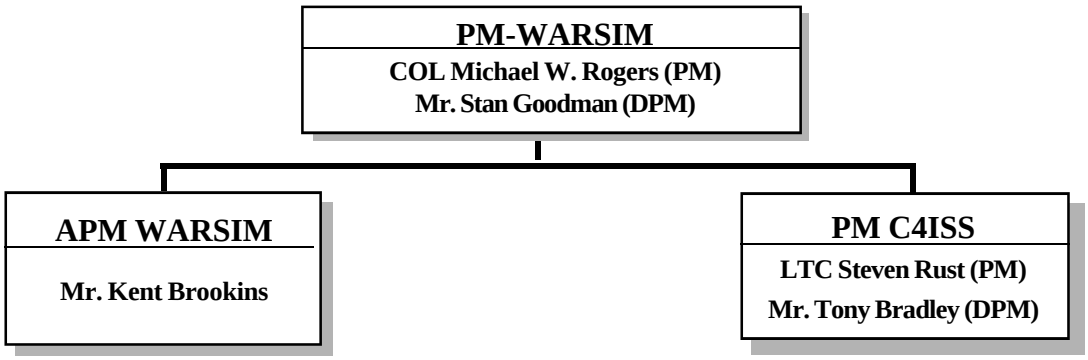
**SE Applications**
The objective of this effort is to develop the architecture for the ACR and RDA domains that will merge with and take advantage of the current capabilities in the SE Core TEMO. SE Applications will meet the requirements of Materiel Developers and TRADOC Combat Developments to conduct experiments and test concepts. This entails flexibility in hardware configurations, high fidelity databases, and large quantities of friendly and threat model behaviors. (Mr. Haga, (407) 384-3686, AMSTI - PM SEADS)

# Project Manager Warfighters' Simulation 2000 (PM WARSIM)

*SECTION* 5

## Colonel Michael W. Rogers

## PM WARSIM Organization




## PM WARSIM Mission

- Develops, fields, and supports the Army's next generation Command and Control constructive training simulation for commanders and staffs from battalion through echelon above Corps.
- Land Development agent for the Joint Simulation System (JSIMS).
- STRICOM Commander's focal point for C4I simulations, evaluation, and horizontal integration.
- Executive agent for the Aggregated Level Simulation Protocol (ALSP).

# Command and Control Simulations

| Programs | Prior | FY00 | FY01 | FY02 | FY03 | FY04 |
|---|---|---|---|---|---|---|
| | Multi-Service / Joint Technology Initiative | | | | | |
| Aggregated Level Simulation Protocol (ALSP) | Sustainment | | | | | |
| Corps Battle Simulation (CBS) | R&D | | | | | |
| OneSAF | Sustainment | | | | | |
| Tactical Intelligence (TACSIM) | R&D | | R&D / Prod | | | |
| Warfighters' Simulation (WARSIM 2000) | R&D | | R&D / Prod | | | |

Command and Control (C2) Simulations are Constructive Simulations used to train Commanders and their Staffs. PM WARSIM-managed programs are shown above. Aggregate Level Simulation Protocol (ALSP) is a multi-service/joint technology initiative to support interoperability of existing evolving simulation systems.

ALSP provides the technical protocols/standards and infrastructure software to allow member simulations to interact on a common battlefield. STRICOM / PM WARSIM is the DoD executive Agent for ALSP. CBS is the Army's current Corps and Division Command and Control Training Simulation and will be replaced by WARSIM. STRICOM supports the fielded software for both BBS and CBS. Minor R&D enhancements are ongoing for CBS by Jet Propulsion Laboratory. WARSIM 2000 is the Army's Next Generation, State-of-the-Art battle simulation. WARSIM will be HLA-compliant, interface with operations C2 Systems, and be designed to reduce simulation overhead through automation. OneSAF is the next generation Computer Generated Force.

# PM WARSIM Narrative Descriptions

**Aggregate Level Simulation Protocol (ALSP)**

The Aggregate Level Simulation Protocol (ALSP) provides a capability for multiple, pre-existing Service and Joint Warfare Command and Control training simulations to interact with each other over local or wide area networks in a distributed interactive manner. A Joint Training Confederation (JTC), capable of supporting Service, Multi-Service, and Joint training exercises, includes three components developed under this project: the ALSP Infrastructure Software (AIS), a reusable ALSP Interface, and participating Service simulations adapted to use ALSP. (The AIS data exchange message protocols which enable interaction among battlefield objects represented in different simulations compose the ALSP Interfaces.) The number of simulations composing the JTC increased from three in 1993 to seven in 1995. Simulations participating in the ALSP JTC for 1999 include USA Corps Battle Simulation (CBS), ASAF Air Warfare Simulation (AWSIM), USN Research, Evaluation, and Systems Analysis (RESA) Simulation, USA Combat Service Support Training Simulation System (CSSTSS 1.5), USA Tactical Simulation (TACSIM), JC2WC Joint Electronic Combat Electronic Warfare Simulation (JECEWSI), USMC MAGTF Tactical Warfare Simulation (MTWS) and USSPACECOM Portable Space Model (PSM). Also included are models on "listening" receiving one way feeds from the confederation. (Mr. Logsdon, (407)384-3622, AMSTI-PM WARSIM)

# PM WARSIM Narrative Descriptions (Cont)

**Corps Battle Simulation (CBS)**
CBS is a Corps and Division level battle simulation used to support Command and Control training for the Commander and his Battle Staff, and major subordinate elements of the corps in the conduct of Air Land Battle operations. It is used to exercise the command staff skills and procedures in the command and control of operational/tactical forces, joint or combined arms forces, and the combat support and combat service support systems through a simulated environment. CBS supports the collective force level training of all U.S. Army Corps, as well as Active and Reserve component Division Commanders and Battle Staff personnel as part of those Corps, in Command, Control and Staff exercises. It is also the exercise driver for the Battle Command Training Program (BCTP) Warfighter Exercises. (Mr. Logsdon, (407)384-3622, AMSTI-PM WARSIM)

**Warfighters' Simulation (WARSIM) 2000**
WARSIM 2000 is a computer-based simulation, with associated hardware, to support the training of unit commanders and their battle staffs, from battalion through theater-level, as well as for the use of command post training events in educational institutions. Designed and built using modern computer technology, modern software engineering techniques and validated algorithms and databases, it will allow Army units world-wide to train in their command posts using their organizational equipment. A key feature of the system will be its use of the technology to minimize the total Army's overhead associated with supporting command post training. The system will be designed to meet emerging High Level Architecture (HLA) standards and protocols to facilitate interoperability with other HLS compliant simulations, simulators, and live training events. Thus it will provide a comprehensive training environment capable of linking its simulation-based constructive entities with virtual (simulator-based) and live (instrumented vehicle) entities. WARSIM 2000 will provide a complete synthetic operational environment with scenarios drawn from the entire operational continuum to support Army, joint, and coalition force training, distributed across the globe. WARSIM will embed CBS and CSSTSS functionality with in the WARSIM software while providing interoperable linkage to a separate intelligence module, WIM. WARSIM will also be the primary contributor in satisfying the Army's responsibilities as the Land Development Agent to the Joint Simulation System (JSIMS). The research and development contract is currently underway. A separate contract will be let to provide for the fielding and installation of hardware platforms in support of the WARSIM basis of issue. (Mr. Brookins, (407)384-3644, AMSTI-PM WARSIM)

# PM WARSIM Narrative Descriptions (Cont)

**WARSIM Intelligence Module (WIM)**

The Warfighters' Simulation (WARSIM) Intelligence Module (WIM) represents the Intelligence Battlefield Operating System (BOS) for WARSIM 2000. As such, it uses computer-based simulation and associated hardware to support the training of unit commanders and their supporting intelligence components from Battalion through theater-level (Echelon Above Corps (EAC)), to include Joint Task Force (JTF) training events in the field and in educational institutions. As the Intelligence BOS, WIM will model intelligence sensors, associated processors, and their intelligence products. WIM will also model individual processes within the intelligence cycle, to include: indications and warning; collection; collection management; battle damage assessment; force projection; and intelligence analysis training support. The WIM software components will be a set of applications, fully integrated with WARSIM 2000, composable within the Joint Simulation System (JSIMS) core infrastructure, designed to provide the Battle Commander and Staff training audience a seamless training environment.

WIM will be designed and developed using high performance computer technology, advanced software engineering techniques, common tools, and training audience-validated algorithms and databases. A key feature of WIM will be the use of technology to reduce the Army's total overhead costs associated with supporting training. The system will be designed to meet current and evolving architecture protocols, including the Department of Defense (DoD) High Level Architecture (HLA) for Modeling and Simulation (M&S), to facilitate linkages using WARSIM 2000 with evolving simulation systems, simulators, instrumented ranges and vehicles, databases, and live training events, as appropriate, without compromising intelligence system security. Linkage using WARSIM 2000 to other simulations, simulators, and systems through network protocols such as the Distributed Interactive Simulation (DIS) protocol will be maintained through the current evolution of these protocols towards the HLA Run-Time Infrastructure (RTI) and associated architecture standards.

WIM will provide a training environment allowing Military Intelligence (MI) units to focus their personnel and systems to assess threats across the operational continuum. WIM will provide an environment that ensures training with scenarios that stress commanders and their MI staffs and units. Hence, WIM will require MI staffs and units to assess the situation, determine courses of action, and plan and issue new orders in a timely manner while using their organizational equipment and procedures. (MAJ Tomlin, (407)384-3642, AMSTI-PM WARSIM)

# PM WARSIM Narrative Descriptions (Cont)

**OneSAF**

OneSAF is a composible, next generation Computer Generated Force (CGF) that can represent a full range of operations, systems, and control process (TTP) from entity up to battalion level, with variable level of fidelity that supports all M&S domain (ACR, RDA, TEMO) applications with an emphasis on human-in-the-loop and no human-in-the-loop. Due to high technical risk association with the development of the objective OneSAF System, the OneSAF Testbed Baseline (OTB) will be developed to provide a vehicle for integration, test and user feedback of technology developments for the objective system. The OTB will be released to cross-domain user labs for early user interactions and feedback. In conjunction, the R&D necessary for development of the OneSAF objective system will be accomplished along with architectural prototyping and proof of principle demonstration. IOC for OneSAF system is FY 04. (MAJ Vaglia, (407)384-3624, AMSTI-PM WARSIM-PM C4ISS)